

# AMERICAN SNOWMOBILER

NORTH AMERICA'S #1 CHOICE

## TRAIL TURBO

**challenge!**

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# PUSH THE LIMITS OF PERFORMANCE

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### TURBOS TAKE ON THE TRAIL!

Two turbo trail siblings face off! These twin powers from Arctic Cat and Yamaha will lengthen arms! [AMSNOW.COM](http://AMSNOW.COM) See more news, photos & videos!

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AMERICAN  
**SNOWMOBILER**

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## Who got you?

**T**hree years old! That's how old I was when I started snowmobiling on my own sled, and that is how old my son is now as he gets started on his first Arctic Cat Kitty Cat snowmobile. Of course, my son's been riding with me and watching snowmobile movies pretty much since birth, but that's to be expected, right?

So, who got you into the sport of snowmobiling? Your parents, grandparents, siblings, cousins, good friends? Everyone has a story about how they got hooked! My dad and grandpa got me addicted! My son's Kitty Cat made me think of my first day riding my own 1978 Kitty Cat. The little track in the backyard of my grandpa's farm got worn right to bare grass, and I hit the same tree at least five times ... but it was glorious!

As we get into the heart of the season, it is important that all snowmobilers – from weekend warriors to diehard racers – introduce others to the sport. If we want trails and riding areas open, and manufacturers to engineer the most addicting vehicles on earth, then we need to get non-snowmobilers onto sleds.

I was talking to Larry Tiede of Woody's Traction about how many snowmobilers tend to be in cliques. This can have negative consequences on our body of riders. We need to be inclusive, not exclusive, from warmly welcoming new people at club meetings to just asking your neighbor if they would like to go on a ride. Don't abandon your riding buddies of 20 years, but make room for one more in your group. The national Take a Friend Snowmobiling campaign is February 5-15, 2016, and it's as good a time as any to introduce someone new to snowmobiling fun. More info: [www.snowmobile.org](http://www.snowmobile.org), [www.amsnow.com](http://www.amsnow.com).

Now, let's have some fun! Use our forums, email us, or use Facebook and Instagram to tell us your story on how and who got you started snowmobiling. The best story will be awarded a prize pack from *AmSnow*, and the top three will be printed in the Mail Bonding section of an upcoming issue!

**Mark Boncher, Editor,**  
[mboncher@kalmbach.com](mailto:mboncher@kalmbach.com)



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### ON THE WEB

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#### NEW T-SHIRTS ARE IN! AT THE AMSNOW STORE

The newest 2016 *American Snowmobiler* T-shirts just arrived in our online store. Check 'em out at [www.amsnow.com/shop](http://www.amsnow.com/shop). Perfect last-minute Christmas or New Year's presents!



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—AMERICAN SNOWMOBILER MAGAZINE



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BY MOTO TASSINARI

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## Flat lands 'eh' OK!

**Photographer:** Scott Tomlinson

**Rider:** Jeff McGirr

**Location:** Bonfield, Ontario, Canada

KLIM riders know their way around much more than the mountains! Jeff McGirr shreds some Canadian trails for this KLIM photo shoot late last season.



**ON THE WEB** More awesome photos at  
[www.AmSnow.com/photos](http://www.AmSnow.com/photos)



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## FACTS, RUMORS & PEOPLE

For the 11th consecutive year, **Polaris** will support state and provincial snowmobile associations through its "Winning Riders" program ... **Arctic Cat** elected Andrew S. Duff to its board of directors. He will also serve on Cat's audit committee ... **Parts Unlimited** named Jay Savignac the new brand manager for Arctic and Z1R ... **Robert Bosch Tool Corporation** announced an agreement to partner with **Tucker Hibbert** for the 2015-16 snocross racing season ... **ArcticWear** will be the official gear of the following snowmobile race teams this season: Christian Brothers Racing, Stud Boy Race Team, 563 Motorsports, Wander-scheid Racing and Country Corners Race Team ... **KLIM** announced that it will continue to sponsor RMSHA hillclimb racer Keith Curtis this season ... **Triton Trailers LLC** recently launched its new website, [www.tritontrailers.com](http://www.tritontrailers.com) ... **Dayco**, a leading engine products and belt supplier, unveiled a new website ([www.dayco.com](http://www.dayco.com)) and an online catalog ... **Polaris Industries Inc.** purchased a 51,000-square-foot paint facility in Spearfish, S.D., which will provide additional liquid paint capacity for Indian and Victory motorcycles ... **Discover Mediaworks** launched a new TV show called **Boondock Nation**, highlighting the extreme sport of boondocking and its growing popularity in the Midwest.



Joe Wiegelt/ESPN Images photo

**FREESTYLE IS BACK!** Big air and high-flying sled acrobatics will once again be on display at the X Games. Marred by some terrible crashes in the past, the stratosphere will once again be filled with sleds in Aspen.

## X Games drops hillcross, adds freestyle

The ESPN Winter X Games return to Aspen, Colo., for the event's 20th anniversary, with the skyward action taking place Jan. 28-31, 2016. The snowmobile events basically revert back to the format from 2014.

After making an exciting return to the X Games in 2015, snowmobile hillcross has been dropped from the 2016 event lineup. However, making its return to the event lineup is the snowmobile freestyle competition, which was last contested at X Games in 2014.

"We are thrilled to be celebrating 20 years of X Games winter events this coming January at Buttermilk Mountain in Aspen Snowmass," said Tim Reed, vice president of the Winter X

Games. Competing athletes will include:

- **Snocross** – Tucker Hibbert, Kody Kamm, Ross Martin, Levi LaVallee

- **Snocross Adaptive** – Garrett Goodwin, Doug Henry, Jim Wazny, Mike Schultz, Jeff Tweet, EJ Poplowski

- **Freestyle** – Colten Moore, Levi LaVallee, Heath Frisby, Daniel Bodin, Joe Parsons, Cory Davis

**For more info**, visit [xgames.com](http://xgames.com).

### REMINDER ►

## Trail pass now required for Wisconsin trails

**If you're planning on snowmobiling in Wisconsin this winter**, make sure you obtain a trail pass first. According to a new law that went into effect on July 1, 2015, annual trail pass stickers will be required in addition to having your snowmobile registered in order to operate on Wisconsin snowmobile trails and corridors. (A trail pass is not required if you only operate on your private property or on frozen water).

For snowmobiles registered in Wisconsin, a trail pass costs \$30 and must be

purchased on the DNR website or from any DNR authorized agent. If you are a snowmobile club member and a member of the Association of Wisconsin Snowmobile Clubs (AWSC), the trail pass costs only \$10 when purchased through the AWSC. Snowmobilers registered in another state will have to purchase a non-resident trail pass for \$50 (up from last year's \$35 fee), available on the DNR website and

through licensed agents.

The revenue generated by the sale of registrations and trail passes will go into the snowmobile segregated fund. It will be administered by the DNR and used to fund the snowmobile trail infrastructure and to reimburse the clubs that maintain the trail system. For more

information, or to find a club to join, call 888-936-7463 or visit [www.awsc.org](http://www.awsc.org) or [dnr.wi.gov](http://dnr.wi.gov).







## 'Learn to Ride' at Togwotee Mountain Lodge in Wyoming

**For beginner snowmobilers,** Togwotee Mountain Lodge and Togwotee Adventures in Jackson Hole, Wyo., are hosting a Learn to Ride getaway. The trip includes three-night cabin accommodations at Togwotee Mountain Lodge, two full days of instruction and riding, equipment rental, round-trip airport transfers and a welcome cocktail reception. Cost is \$1,166 for two people.

### Expert guides will offer the following instruction:

- Basic snowmobile tips/refreshers
- Avalanche awareness
- Throttle control, countersteering, boondocking and sidehilling
- Getting "unstuck"
- Hands-on practice (off trail)

### Choose from the following dates:

- December 3-6, 2015
- January 7-10, 2016
- March 15-18, 2016

**To get more information** about the Learn to Ride getaway, or about the lodge in general, see [www.togwoteelodge.com](http://www.togwoteelodge.com).

## Malcolm Chartier calls it a career

**I**n early October, Malcolm Chartier announced his retirement from competitive ice oval racing after 15 seasons.

"I have decided to take a different career path that heads me in a direction for the future of our family business," a statement from Chartier read. "It was a very hard decision for me to make, especially with the many years of racing and the close connections we have in the industry."

Very much still in top racing form, the Fair Haven, Mich., native was never one to be far from the winner's circle, finishing third in the TLR Cup overall points standings last season. He took home the top honors in three of nine races during the 2015 season. Some of Chartier's career highlights include back-to-back TLR Cup



**GOING OUT ON TOP** Despite seeing a lot of ice oval racing success in the last few years, Malcolm Chartier is stepping away from racing and refocusing his efforts on chassis development and product R&D.

points championships in 2013 (when he won five of six TLR Cup races) and 2014. Those two seasons also included back-to-back wins at the Eagle River World Championship. He also won the Grand Prix Ski-Doo de Valcourt in 2014.

"Although I won't be racing, I'm looking forward to

staying in touch with the industry and supporting the future of ice oval racing," said Chartier's statement.

Chartier's plans after racing include continuing to work with Mike Houle on chassis development, as well as assisting sponsors and suppliers with research and future product development.



## AMSOIL SNOCROSS PAYS IT FORWARD

The **AMSOIL Championship Snocross Series** is now giving young racers the opportunity to race more. During the 2015-16 snocross season, competitors who finish in the top five of Sport and Sport Lite class finals on each event day will receive one free regional registration at any event of their choosing.

"We understand that it costs a lot of money to go racing, and we hope this program will be a way to give back while supporting our local series throughout the U.S.," said a statement from the series on [www.snocross.com](http://www.snocross.com).

When sponsor budgets shrink, racer support programs are often among the first items on the chopping block. This is one way the racing organization can spur a new generation of racers on to future podium finishes.

**39**  
THE NUMBER OF  
SLEDS THAT ARE  
AVAILABLE  
IN-SEASON FOR  
LESS THAN  
\$10,000 US  
FROM THE FOUR  
MAJOR OEMS.



**ON THE WEB** // More News at  
[www.AmSnow.com/news](http://www.AmSnow.com/news)

## Growing grass drags in Upstate New York

IN UPSTATE NEW YORK, autumn means snowmobile grass drag season, and two of the best events happen the last two weekends of September: the **Snow Bash** in Ohio, N.Y., and the **Excell Eastern Grass Drag Nationals** in Bouckville, N.Y.

### SNOW BASH

**H**osted by the Ohio Ridge Riders of Ohio, N.Y., and Blizzard Mfg., Snow Bash saw 434 entries over Sept. 19-20, including **117 amateurs and 29 Pro Stock 1000s. Saturday's spectator count was up about 33%** over the previous year. In addition to racing, the weekend



featured vendors and a huge swap meet.

All kinds of snowmobile classes were represented, from Kitty Cats and 120s to Open Mod 1000s with amateurs and pros behind the bars. In the Amateur Bash Master and the Pro Bash Master, four winners of specific classes ran against each other at the end of the day on a bracket timing tree instead of a pro timing tree. Walter Joy won the Pro class and, for the second year in a row, M. Gorinshe won the amateur class. Congrats!

A new PS1000 event named the D&D Powersports \$9,000

**BASHING THE COMPETITION** Not verbally of course! Walter Joy and the Morin Racing team came out on top of the Pro Bash Master class.



**MACH Z SPEED** On his Benoit-powered sled, Adam Osha won the PS1000 event with a quick time of 4.495 seconds and speed of 113.34 mph, edging out Mike Bailey by a 0.069-second margin.

High Roller Shootout had the largest purse ever offered for a single event at Snow Bash. In the final race, Adam Osha

(Kopacz Racing) beat Mike Bailey by a mere margin of 0.069 seconds to take the win and the cash!



**CUSTOM BITE** Riders can dial in the amount of carbide "blade" on the Pilot TS ski according to individual riding style and trail conditions.

## AWESOME ADD-ON ▶ Pilot TS ski

**O**ne of the biggest upgrades to select Ski-Doo sleds in 2016 is the Pilot TS ski, and now BRP is making the technology available to more Ski-Doo owners. For sleds that weren't factory-equipped with the adjustable skis, accessory upgrade kits will soon be an option.

The Pilot TS is the industry's first truly adjustable ski, allowing riders to easily dial in front end bite to match trail conditions and their riding style. Twisting a knob in front of the ski leg raises or lowers the ski runner/carbide blade. When fully extended, the blade runner delivers maximum precision and bite in corners, especially in hard and icy conditions or fluffy snow conditions. When fully retracted, it delivers easier steering and virtually no darting.

There are 20 clicks of adjustment over the .5 inch/12.5mm range, and 10 turns of the knob cover the entire range. The position is indicated on a

gauge on the adjustment stem.

To be able to accept the Pilot TS skis, your sled must have RAS 2 front suspension and 2016 model spindles. If your sled has neither of these, both can be added via a RAS 2 suspension kit (#860201241 or #860201353).

There are two Pilot TS kits available depending on which spindle you have:

**#860201237:** For models with the 2016 RAS 2 spindles standard (or models upgraded with RAS 2 suspension kit #860201241 or #860201353, which include 2016 spindles). Cost: \$559.99 US/ \$659.99 CA.

**#860200692:** For sleds that are equipped with RAS 2 suspension but not 2016 spindles. Cost: \$649.99 US/ \$757.99 CA.

To find more BRP accessories to fit your ride, visit [www.store.ski-doo.com](http://www.store.ski-doo.com).

**PILOT TS  
IS THE  
INDUSTRY'S  
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ADJUSTABLE  
SKI.**



**Hillclimbing in New Hampshire** Looking for more fun on the East Coast? Check out the New Hampshire Hillclimb Challenge at Pats Peak Ski Area in Henniker, N.H., April 2. There will be 30 hillclimb classes, as well as side-by-side drags, vintage oval racing (17 classes, including kids) and a vintage show. **For more info, visit [www.nhillclimbchallenge.com](http://www.nhillclimbchallenge.com).**



## EXCELL EASTERN GRASS DRAGS NATIONALS

**T**his event (Sept. 26-27) also included a swap meet, a vintage show and numerous classes (including vintage). Excell offered opportunities for amateurs, pros and even stock/mod 120s. **Bouckville, N.Y., hosted 280 entries**, including several of the top teams from across the country.

Saturday's highlight was the Pro Mod Shootout under the lights. There were 15 sleds in this shootout at \$100 per sled and a split of 70/30 for first and second place. Round after round, racers went down the track two at a time until there were only two: Keith Culley and Adam Osha. One week after earning a Snow Bash victory, Osha and Kopacz Racing came out on top once again.

Racing on Sunday was

nonstop and exciting, with fast times and speeds being posted by the Outlaws and the Heavy Mod 1000s. Chad Oliver had a 1.14-second 60-foot time, and Adam Osha had a 118.6-second run with 4.36 ET. There were even sub-4 second runs from the Outlaws! For a complete list of results from this event and to stay up to date on upcoming events at this venue, check out **[www.excellraceway.com](http://www.excellraceway.com)**.

The weekend closed with 31 Sportsman and 21 Pro Class 4,000-hp trucks in the MRA National Mud Drags. Shane Ohlrogge in modified scoops set a new record of 2.471 seconds in 200 feet (original record: Oddis Wren, 2.61 seconds, 2009).

*Stories by Jon Johnville;  
JJ'sOutlaw Photography.com*



**UP-AND-COMING RACER** Haley Reed (aka "Hot Rod") had a big weekend racing for Team Reed's on her Ski-Doo. The 16-year-old's sponsors include D&D Powersports and Woody's Traction.

## TLR Cup to Host Wounded Warriors



**T**his race season, the TLR Cup Tour will host and honor military veterans associated with the Wounded Warrior Project (WWP) and their families by offering them VIP experiences at five different race ven-

ues. In addition to watching outstanding racing action on race day, Warriors and their family members will be invited to personally visit race teams and get an up-close look at race sleds and equipment. The Warriors will also

have the opportunity to participate in the podium ceremony at the end of the day.

"After spending a year in Iraq and having firsthand combat experiences, I have a passion for supporting our veterans," said Todd Achterberg, TLR Cup Tour Director and a retired 24-year veteran of the U.S. Air National Guard. "With colleagues suffering from many service-based injuries including PTSD, I'm looking forward

to doing what we can to bring some winter entertainment to these true Warriors."

The WWP experience will take place during the following race weekends:

**Jan. 2-3:** Ironwood, Mich.

**Jan. 15:** Eagle River, Wis.

**Jan. 23-24:** Wausau, Wis.

**Feb. 7:** Francis Creek, Wis.

**Feb. 14:** Weyauwega, Wis.

**For more info, visit [www.tlrcup.com](http://www.tlrcup.com).**

# You Tube

**Check out AmSnow on YouTube!**

American Snowmobiler's YouTube channel brings you even more great snowmobiling footage! Check out the latest episode of **AmSnow TV**, great snowmobile tech tips, exclusive AmSnow shootout coverage, issue previews and much more! Best of all, subscribing to our YouTube channel is FREE! **Check it out: [www.youtube.com/AmericanSnowmobiler](http://www.youtube.com/AmericanSnowmobiler).**

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## COOL NEWS



### Race Into Winter: The perfect way to spend a fall day

If you've never been to the New Hampshire Snowmobile Association's (NHSA) big Race Into Winter snow show in Epping, N.H., we highly suggest making the trip in October. We did! You'll get high-octane watercross all day, along with professional grass drags, freestyle shows, a snocross summer chip track, plus hundreds of vendors and a huge swap meet.

All the big industry players were there this past year, and nearly 46,500 people attended over the span of three

days. The vibe is more like a cool music festival that is just starting to become the "next Lollapalooza" ... very fun, accepting and folks just excited about snowmobiling!

Many of the people that come to AmSnow's New York Shootout (happening December 11th at the Ole Barn in Inlet, N.Y.) were also in attendance, including D&D Racing, Curve Industries, Bikeman Performance and more.

There were plenty of new things to see, too. If you're looking for possibly the next local clothing

company to go big, then go to [www.judgedgear.com](http://www.judgedgear.com). If you're looking for some new LED lighting for your machine, you'll find it at [www.ljeproductions.com](http://www.ljeproductions.com).

We also finally got the skinny on what happened with those ¾-size sleds that have been floating around. We'll have more on that soon, but we don't want to let it all out of the bag just yet!

**For more on this fun, can't-miss event,** go to [www.nhgrassdrags.com](http://www.nhgrassdrags.com) or [www.nhsa.com](http://www.nhsa.com).

- Mark Boncher,  
AmSnow Editor

### WILD FOR TURBOS?

EVO has info here! More on trail-friendly turbos on pg. 16!

### GIVE YOURSELF A BOOST

Looking to add a few more horses to your Yamaha SR Viper or Arctic Cat 7000? Evolution Powersports has achieved over **160 hp** with its new Stage 5 Reflash, headers and exhaust. The programming changes the timing curve, rev limit, fueling and other ECU parameters, all without the need for additional fuel controllers. The flash can be added to base files from 2014 to 2016.

For Viper/7000 turbo customers, Evolution offers two flashes to improve the sled's performance and safety. For EVO and other stock compression kits (no head shim), the Reflash will change the timing curve to a more boost-friendly setup, making the sled more fun and easier to clutch. With this setup, you can choose to use lower-octane fuel, or gain an additional two pounds of boost on your current fuel octane (additional fuel will need to be added for more boost). On low compression kits, the rev limiter can be raised to increase performance further.

**For more info,** contact Evolution Powersports by calling 970-680-3861, or visit [www.evopowersports.com](http://www.evopowersports.com).





## MAIL BONDING

Readers ride n' write!



**MICHAEL MARASCHIELLO** sent in this pair of beauties from Springville, N.Y.



**WHO NEEDS SNOW?** Mike Starratt and his son had just finished mowing the lawn on Sept. 1 when they decided to have some fun on Mike's 2015 Ski-Doo MXZ TNT 800R E-TEC. The impromptu pre-season practice took place in Sioux Lookout, Ontario.



**TOM TE BEEST** says, "Here is a throwback photo taken in 1976 with 'The Gang' I grew up snowmobiling with 'Up North' in Wisconsin. It reminds me of one of my favorite freedoms – to roam the great outdoors and enjoy God's creation in a way that most people never experience. Don't take your freedom to ride for granted. Join a club and represent the rest of us well. Check out Uncle Carl's Bi-Centennial Edition Evinrude Skeeter. Think Snow!!!"

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**NEVER A DULL MOMENT!** Our test riders agreed that if you get bored on the 6000 RR, then you should probably check your pulse! It's fast, tough and fun! The FOX shock package was engineered to Team Arctic race specs, so it's capable of handling much more abuse than your average trail tour.

2015 Arctic Cat ZR 6000 RR »

# Race day reborn, everyday

**BIG HITS, BIG FUN ON CAT RACER**

» **We discussed in depth** in our comparison articles last season the race feel one gets from Arctic Cat's RR (Race Replica) line of sleds. That holds true on the track, and it turns out that our ZR 6000 RR demo was pretty dang fun for an aggressive-type trail ride, too!

## ■ Here's the thing

You are getting a race sled when you buy the 2015 RR. There's no windshield, no electric start, and shocks are valved to Team Arctic specifications. So if you're looking for a super soft, warm ride that starts with the turn of a key, look elsewhere. On the other hand, if you're looking for razor-sharp handling to take on the rough stuff with ease, this is the sled!

Let's talk suspension first. The ProCross chassis, Slide-Action rear suspension and ARS front end all work very well together. Handling is great, steering effort is quite light (even with aftermarket 7.5-in. carbides), and the 129-inch rear skid is a great length for smoothing out the trail (or track). It's been a proven

winner on the race track, and we'd expect nothing less for the general consumer.

The FOX Float X EVOL shocks up front have the adjustable compression and rebound, so you've got a lot of possibilities there. The back-end shocks also offer a wide range of adjustment with FOX's Zero Pro piggyback shocks in both center



## Take 2!

**THIS RR IS MY PERFECT** "Ricky Bobby" sled. I love to pound this sled through ditchlines and mogul fields, and we even built a few "kickers" for it on our makeshift farm-field suspension-testing course. It was loads of fun, but I would put a 1.5-inch lugged track on it ASAP if it were my own sled. Just a personal preference. – **Mark Boncher, AmSnow Editor**



and rear locations. Just remember: these were built to Team Arctic specifications, and they're meant to take the abuse of big cross country or snocross hits. Even after softening the setting on this shock package, everything is still fairly stiff. It's probably too stiff for the trail rider who's out for a weekend cruise. But for the rider who's railing around corners and sending it over road approaches, this porridge is just right!

The 6000 C-TEC2 engine is another feature that fits the bill perfectly here. Its lightweight characteristics contribute to the overall low-effort feeling of the front end. The throttle pull is also very light, and the engine snaps right off the line. We continue to be impressed by the oil and fuel economy of this engine as well. It makes us all that much more anxious for a new Cat 800 C-TEC that we hope is in the not-so-distant future!

### ■ Reality check

Last time I looked in the mirror, I did not look anything like a Tucker Hibbert replica. Nor do the trails out my back door look anything like a snocross track. Truth be told, I probably wouldn't have considered buying this sled given my usual riding style (aggressive, but not racer-aggressive) and typical riding terrain

2015 Arctic Cat ZR 6000 RR

**Engine:** 599cc EFI 2-stroke **Drive:** Arctic 6 post (rpm sensing) primary, 10.75-in. dia. Arctic (roller cam) secondary **Exhaust:** APV w/ tuned pipe, pipe sensor and stainless steel muffler **Brake:** Race radial master cylinder hydraulic brake / lightweight brake disc **Ski Stance:** 42-43 in. adj. **Front Susp.:** ARS w/ FOX Float X EVOL shocks w/ comp. and rebound adj. and sway bar (10 in. travel) **Rear Susp.:** Slide-Action w/ Tri-hub rear axle, coupling blocks, torque-sensing link, adj. torsion springs w/ FOX Zero Pro piggyback shocks w/ adj. dampening (13.5 in. travel) **Track:** 15x129x1.25 RipSaw **Fuel Tank:** 11.7 gal. **Rec. Fuel:** 91 Octane **Price:** \$12,749 US / \$14,549 CA **Real World Stats\*:** **Top speed:** 82.82mph **1/4-mile:** 14.31 sec. **0-60mph:** 4.48 sec. \*AmSnow tested

(trail). That is, until I rode it.

The amount of fun one can have on this sled, tossing it through trail corners and hopping off snowdrifts, far outweighs the small annoyances of the sled. I could tolerate the lack of wind protection from the race-height windshield. The pull cord start didn't bother me much; the 600 is quite easy to start. Even in temps far below zero, I don't think it took more than three pulls to fire it up. I'm not a

fan of the rocker-style kill switch on the Cats (and Yamahas now), but that's just a personal preference.

There are some more trail-friendly features here too, like the 1.25-inch lugged RipSaw track and 12V accessory outlet on the dash. More storage is always nice, but you don't expect that from a race sled. I found the handlebars to be to my liking. They were a little higher than some, making the transition from sitting to standing very easy. But if you're strictly a sit-down style rider, you will probably find the higher bar position a little uncomfortable on long days.

The more I rode the sled, the more I appreciated the capabilities of the shock package. However, I still think it's overkill for the majority of consumers. Apparently Arctic Cat agrees with me, because, as we've reported, they've dialed down the shocks for their 2016 RR sleds.

Our early-season demo rides on the 2016 models proved that to be true, and it's a good move that will make the sled more appealing to the average consumer.

It's safe to say that this sled is built to have its limits pushed more than most other sleds on the trail. But make no mistake – this sled will push you right back if you're not on your game! 🐾



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**COVER  
STORY**

# **TURBO...** **engaged!**

## **TWO TURBO 'SIBLING' SLEDS FACE OFF!**

BY MARK BONCHER • Ryan Thompson - RLT photos

**TURBOS ARE NOT JUST FOR THE MOUNTAIN GUYS!** Arctic Cat has banked on this since the mid 2000s, when it introduced the Suzuki twin T660cc liquid 4-stroke into the trail lineup. This was an opening act (albeit much less power) to Cat's newer Suzuki 1100 turbo. Plenty of straightline racing guys have had turbos for years, but Yamaha is the first (and only) factory to offer a "trail-friendly" and "factory-approved" aftermarket turbo option for 4-stroke snowmobiles. This option was supposedly available to trail folks last year, but due to an overwhelming response for Yamaha turbos in the mountains before the trail season really took off, the supplier literally ran out of castings. Only a few very select dealers and preferred customers in more trail-heavy areas had



## SR Viper L-TX LE Turbo



**BRING AN EXTRA SET** of goggles easily on the Yamaha and Cat sleds with this nice little goggle holder behind the dash. Just another little positive piece that is available on both the SR Viper L-TX LE and ZR 9000 Limited.







## + Pluses

This is my personal favorite sled from Yamaha this year. Fast, smooth, fast, smooth ... and fast. It also handles well, looks great and has all the storage amenities.

any, and the supplier had to get more made and shipped, making it tough to meet the demands of the trail guys before season's end. We are told it will be different this year, so we jumped at the chance to test these two top snow-slingers side by side and give you the lowdown. If you ever get a chance to throw a leg over either one of these, we highly suggest taking the opportunity to pin it ... at least once!

## The only two hypersleds

The fact that both of these sleds are putting out 175 hp (we registered 174.1 for the Cat and 175.3 for the Yamaha at *AmSnow*'s New York Shootout last year, Feb. 2015 issue, pg. 24) makes them the only players in the current "hypersled" market. All the biggest 800cc horsepower sleds from the other OEMs are 150+ hp twin 2-stroke sleds. They may compete through the first 1,000 feet, but the longer legs of these trail-loving 4-strokes take over after that, and top speed is not even comparable if everything else (conditions, traction, fuel, etc.) is equal.

We know that snowmobiling is not always about speed, but folks who spend almost \$16,000 for a 180-hp turbo sled tend not to be the leisurely riding, "tour director" type. There is nothing wrong with taking in the scenery on these sleds, as they are plenty smooth enough to be likeable at any speed. That being said, a quick example of how these two sleds outpace anything else in the market could be seen when we compared top speeds at our New York Shootout last year. The Cat and Yamaha garnered 107.39 and 109.22 mph, respectively. The next fastest 800 (the new Polaris AXYS 800) only went 100.89 mph.

There is actually a bigger gap between the top speeds of the turbo sleds and the 800s than there is between the top speeds of the 800 and the 600cc sleds. This is backed up again by the independent, unbiased stats *AmSnow* puts together every year. It is also a story not often told. Many people think (falsely) that these turbo sleds have just a tad more power and speed than an 800. However, the numbers show these sleds are a BIG jump up from an 800. That increase in speed can catch first-timers off guard. To ride a turbo, you better have your "big boy pants" on!

## 137 is the right length

We've run these turbo motors side by side in several sled lengths. Last year, we compared two mountain sleds (November 2014, pg. 36) and the two 129-inch trail sleds at our New York Shootout. Plus, we've had Arctic Cat Turbos in several chassis and lengths as

### AmSnow Side-by-Side Sled Specs

SLED	2016 Arctic Cat ZR 9000 Limited 137	2016 Yamaha Viper L-TX LE Turbo
ENGINE	Suzuki 1056cc liquid EFI twin 4-stroke	1049cc FI triple, Genesis 4-stroke
HP	174.1*	175.3*
DRIVE	TEAM Rapid Response primary, TEAM Rapid Reaction BOSS secondary	YVXC, Variable Ratio / Electronic Shift Reverse / Magnesium Chaincase & Cover
EXHAUST	Stainless steel muffler, with turbo-charger	Stainless, with MPI turbo kit
SKI STANCE	42-43 in. adj.	42-43 in. adj.
FRONT SUSP.	Arctic Race Suspension w/ sway bar w/ FOX 1.5 ZERO QS3 shocks (10 in. travel)	SRV w/ FOX Piggyback clicker w/ coil spring shocks (10 in. travel)
REAR SUSP.	SLIDE-ACTION Rear Suspension with tri-hub rear axle system, coupling blocks, torque-sensing link rear arm and adjustable torsion springs w/ Arctic Cat Gas IFP front and FOX 2.0 ZERO QS3 rear shocks (13.5 in. travel)	Dual Shock SR 137 w/ Aluminum HPG front and Aluminum HPG w/ Piggyback clicker rear shocks (13.5 in. travel)
TRACK	15x137x1.25 RipSaw II	15x137x1.25 RipSaw II
FUEL: TANK/OCT.	10.4 gal. / 91 octane	10 gal. / 91 octane
PRICE	\$15,649 US / \$17,949 CA	\$13,599 US + \$2,500 for spring-buy turbo or \$3,300 for in-season turbo / 15,749 CA + \$3,000 turbo





### LIME GREEN MUSCLE!

We are huge suckers for muscle cars, and Cat pushes those feel-good buttons of ours every year with sleds like the ZR 9000 Limited 137.



## ZR 9000 Limited 137

demo sleds over the years. We finally think we've found the chassis that suits them best. The 137-inch length of the ZR 9000 Limited and the SR Viper L-TX LE is where the turbos are most at home.

The extra heft of a 4-stroke, turbo, and intercooler is much to overcome with pure horsepower in the mountains, but it's improving with weight-saving technologies. Weight is less an issue in the trails, however. Handling, predictability, effort, warmth, comfortability as well as other factors are greater concerns for trail riders.

In addition, these sleds put out A LOT of power, so a short 121-inch or even a 129-inch track and rear suspension have trouble harnessing all the ponies and putting it to the snow. We've tried 144-inch skids, but bigger lugs on some longer crossover tracks impede top end. Even with shorter, 1.25-inch lugs, the length of a 144-inch track on a heavier sled can be tougher in the trails, especially if it is a "straight rail" and not a "tipped-up" rail design.



So, after all kinds of track-lengths, lug lengths, traction products, and miles driven, we have concluded that the newest 137-inch versions of these two sleds finally hit the nail as close to the head as possible. This size gives the most trail fun, predictability, precise handling, and versatility without sacrificing performance for the rider of a high-power 4-stroke turbo.

### What is different?

The big difference between these two sleds is obviously the motors. The Cat uses a Suzuki-built 1056cc twin with a 98 x 70 mm bore and stroke, and the turbo comes standard. Yamaha has a 1049cc triple with an 82 x 66.2 mm bore and stroke, but Yamaha sources out the turbo to MPI (Mountain Performance Inc.) out of Draper, Utah. This system is offered through Yamaha Parts and Accessories and has a limited warranty if installed by a certified dealer. In the Spring Power Surge program held by Yamaha, the

### + Pluses

Proven Suzuki turbo power pulses from the 9000. It was a toss-up between this and the old all-white, 141-inch 2012 turbo for many of our test riders, but all like the lack of turbo lag on Cat turbos.



# WASTEGATE

AN ELECTRONICALLY CONTROLLED VERSION IS ADDED TO THE MPI TURBO FOR THE VIPERS ON THE LOW ELEVATION KIT.



**SHOCKS GET EASIER, SO DOES STORAGE** The new FOX 1.5 Zero QS3 shocks make tuning easier for the casual rider. The knob easily adjusts to just one of three compression settings. Storage is also ample here, with a standard trail bag on the back for tools, belt, late-night fireworks, etc.

turbo was \$2,500 extra for your Limited Edition Viper L-TX. BUT, if you waited until the season started last year, the kit jumped to \$3,300, so there is some savings if you buy in spring. The Cat also has the new TEAM roller clutch system, while the Yamaha still uses its YVXC, Variable Ratio clutch system that now has electronic shift reverse and a magnesium chaincase and cover. (Since the Yamaha-Cat supply partnership, all the Viper or ProCross chassis sleds have the same reverse.) There is different gearing, too, with the Yamaha being taller and seeming to have slightly longer legs.

The second big difference between these two sleds is price, until you really crunch the numbers. The MSRP for the Yamaha Viper L-TX LE is \$13,599, which sounds like a steal. But to get the turbo, you have to add that spring-buy minimum of \$2,500, which brings the total to \$16,099. The Arctic Cat ZR 9000 Limited has an MSRP of \$15,649. So there is only a \$450 difference at the end of the day ... or is there? Don't forget that you still have to pay your Yamaha dealer to install the turbo, which even with

a good deal will probably run another \$500. The install cost makes the difference more significant. But heck, if you are willing to finance \$15K, I am pretty sure you are willing to finance \$16K!

The next big difference is the use of the Performance Damper kit on the Yamaha Viper. This debuted last year as a Spring Power Surge extra for Vectors and Apexes. The only way to get the Performance Damper is to put a deposit down on a spring-buy 2016 LE model, but if you still want one, there might be a few LE models lingering at dealerships. All spring-buy LE packages, including Vipers, got one of these mounted in the back across the bumper and up front under the hood on the frame.

There's a little difference in the shock names on both the Cat ZR turbo Limited and the Yamaha L-TX LE, but make no mistake, these both have FOX QS3 shocks up front. These are the new coil-over HPG rebuildable shocks with three easy-to-adjust compression damping settings. The rear shocks are also FOX QS3 shocks, and the front track shock is an HPG. The naming is different on the specs, but don't be con-



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**BOTH OF THESE  
SLEDS PUT OUT  
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ONLY PLAYERS IN  
THE CURRENT  
“HYPERSELED”  
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fused. Naming is also different on the front and rear suspensions, but they both have Cat's Arctic Race Suspension with sway bar up front (Yamaha calls it the SRV) and the Slide-Action rear suspension with tri-hub rear axle system, coupling blocks, torque-sensing link rear arm and adjustable torsion springs (Yamaha's Dual Shock SR 137).

Another small difference is in the skis. Yamaha uses its new Tuner 2 skis, which have two deep keels, two carbide slots and allow the use of many different carbide length combinations for more or less aggressive turning bite. Cat uses its ProCross-6 ski with a dual deep split runner with carbide. Both work well, and the stock Cat ski is a little more aggressive than the stock Yamaha ski for cornering, until you start working your way up the carbide ladder to longer, more aggressive carbides on the Tuner 2 ski. Finally, the Cat has a taller 11-inch windshield on it that looks great and actually helps shield a little, while the Yamaha has a “sport” windshield.

### Our decisions

Both sleds have incredible power that is smooth and usable. Both have heated seats, the new QS3 shocks, and lots of storage standard. The Cat gets the nod for probably being the most trouble-free, as we still aren't 100% sure that an “aftermarket” turbo is right for people looking for longer, more comprehensive warranties.

However, this Viper LE is the smoothest trail sled Yamaha has made in years, and of all of the current Yamaha sleds, it's most fun on the trails. Maybe it's because the L-TX is the “new kid,” but we got off this sled with only good things to say about it. It's also close to the most expensive sled on the market when all is said and done. Both sleds are ridiculously expensive, but we all like dreaming about Ferraris, even if we can't afford them!

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# 2016 Ski-Doo Expedition



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# NOT JUST HITCHES

DRAFT HORSE  
SLEDS THAT  
PULL THEIR  
WEIGHT AND  
DELIVER FUN

BY ROSS HALVORSON • Ryan Thompson - RLT photos

**H**ighway haulers of the snowmobile world can be found right here! Whether they're hauling firewood, fence posts or passengers, these sleds do the dirty work with ease!

And after your chores are done, you might just want to run off and play in the powder, or head out on a sunset trail cruise. These fine fillies have that covered too!

The Ski-Doo Expedition Xtreme, Yamaha VK Professional II, and Arctic Cat Bearcat 7000 XT all have the ability to both work and play. Saddle up as we compare these freaky-fun workhorses of the snowmobile industry!

## WORK? GET SERIOUS!

Someone needs to test the Ski-Doo Expedition Xtreme for PEDs! Or maybe this is just the offspring of an X-RS and a Tundra. It doesn't really matter how Ski-Doo's engineers came up with the idea for this new sled. This is way more fun than one is supposed to have on a utility sled!

If you've skipped ahead to the stat box, you've already seen things



## + Pluses

Superb trail manners, plenty of zip with 800cc E-TEC, cargo rack AND tow hitch

like an 800R E-TEC engine, RAS 2 suspension and horsepower numbers that you're more used to seeing on a high performance trail sled than a utility sled. Let me assure you, though: there's plenty of utility in this powerhouse as well.

The standard trailer hitch and cargo rack are just as welcome here as they are on the Yamaha. Ski-Doo specifies a load capacity of 55 pounds on its cargo rack, and that's plenty for tools or ice fishing gear. The synchromesh transmission allows shifting between high and low on the fly. You can start off

## 2016 Yamaha VK Pro II

**COMING TO AMERICA!** Ever popular overseas, Yamaha's VK Pro II makes its American debut in 2016. One of the better 2-up buys of the season, it has plenty of muscle for tough jobs too!

nice and easy when towing, and then pop it into high gear to cruise back to camp once you hit the homestretch trail.

Backing up to that tow sleigh is made easy, even in deeper snow, with the articulating SC-5U rear suspension and 20x154x1.75 track. You can even lock out the articulation feature while towing. The 1.75-inch lug is exceptional when towing, or when you just want to have some fun!

The Xtreme's 800R E-TEC may not have as much torque as the 4-stroke Yamaha or the Arctic Cat, but its performance characteristics have high entertainment value. The massive track, like on the Yamaha, lends itself well to anything off trail. And with plenty of punch, you're able to enjoy those "epic POW days" on the sled that just helped finish your chores.

What surprised us the most was the excellent trail handling of the Xtreme. With the big track and the utilitarian appearance, you'd probably expect this to be a little cumbersome heading down the trail. Not true!

The addition of the RAS 2 front end keeps this sled sizzling through the corners. This front end is similar to that of Ski-Doo's MXZ X trail performance sled. The shock package is too! It speaks to the versatility of a sled when a manufacturer uses the

same shock and engine package on a utility sled as it does on a trail performance sled. The expectation is that the Xtreme will be your sled of choice whether you're hauling wood back to camp or hauling you-know-what down the trail with your riding crew!

### LOTS OF PROS FOR THE PRO

Why do Europe and Canada get all the cool "utility" sleds first? Most likely because sleds like Yamaha's VK Pro have tons of success on European soil. Now the VK Pro II makes its way to North America. Hey, we've got work to do over here too!

With a VK Pro II, you'll get your work done with time to spare. This sled offers a wide range of characteristics, including a cargo rack and trailer hitch standard. I find

having a separate space for tools and additional cargo is helpful. The cargo rack allows you to strap things down more easily than throwing them in the trailer, where items are likely to get jumbled around.

If you can't fit everything on the cargo rack, there's additional under-seat storage space that holds the tool kit, and it has more room for things like first aid kits, tools, and other items. It's nice to know you don't have to sacrifice your working cargo capacity in order to carry more along.

The VK Pro II is powered by the same 1049cc Genesis engine you'll find in the RS Vector, but its power delivery is unique to the VK. The ignition mapping is specially designed for smooth operation from take-off all the way through the top of the power band. You'll notice that even mashing the throttle from a standstill produces a gradual acceleration that's ideal for taking off with a passenger or cargo in tow. The engine mapping simply doesn't allow that initial throttle jolt to happen. You get a nice smooth take-off every time.

Don't take that to mean there's no performance in this engine. There's

### + Pluses

Comfy, strong 2-up 4-stroke utility, shocks calibrated for heavy loads





# 2016 Arctic Cat Bearcat 7000 XT



**MORE FOR THE TRAILS** Cat's Bearcat 7000 XT keeps its workman's attitude, but adds more trail-friendly features (like an easier articulating rear suspension) to bridge the hauler-to-cruiser gap.

plenty of that! Our independent dyno tests have shown this motor to crank out close to 130 hp (give or take, depending on model). It doesn't feel like quite that much on the VK Pro II, but there's still plenty of zip to be had for a 2-up cruise.

Those that have spent seat time on previous versions of the VK Pro will notice the 2016 has a higher ride height. Yamaha raised the seat and bars almost two inches. The change stemmed from a redesigned fuel tank that also increased fuel capacity. That redesign also narrowed the seat, creating a more comfortable seated position for many riders. So although this sled is a workhorse, you won't have the "I've-been-riding-a-horse" walk when you dismount!

The passenger seat is comfortable as well (yes, we even test the 2-up seats on our demo rides!). A flip-lever torsion spring adjustment converts the sled for two in the seat. The slightly higher seating position than the driver gives a passenger a decent

view of what's ahead. You'll notice there's no wind deflection for the passenger hand bars. I thought that would be more of an issue, but the reshaped windshield and shape of the sled's front end nicely deflect wind around both driver and passenger. Still, a little something wouldn't hurt for debris and cold days. Some heat, perhaps?

If you're still questioning whether the VK Pro II can get the job done, consider the fact that it was designed in Russia. If you're not familiar with the Russian snowmobiling experience, think of extreme cold, lack of groomed trails, long distances between destinations and bottomless powder like you've never seen.

Maybe that helps you understand the massive footprint of the 20x154x1.5

track spun around the Pro Comfort Suspension. Other suspension features include a lever torsion spring adjustment and coil-over KYB gas cell shocks up front. Both are specifically engineered for adjusting to heavy loads or additional riders, and to take you and your cargo almost anywhere on the snow.

## BEARCAT DELIVERS

Arctic Cat's Bearcat line is a constant in utility sled fleets around North America. They are commonly spotted on ski hills, resorts and as rentals. They're versatile sleds with a work ethic reflecting the blue-collar roots of the company. In 2016, the line gets major updates!

We had a chance to cruise the trails aboard Cat's Bearcat 7000 XT during our demo rides, and we can confirm a host of changes – from chas-

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## + Pluses

Cat's back-up light, under-seat storage and flip-up hood are great!

sis to trunk space – that keep the Bearcat name near the top of the utility game.

The improved Bearcat sports a new ProUte WT chassis. It adds strength and a few different curvatures to improve rider comfort. The seat is narrower, and the body panels provide better wind protection. The new skeleton also houses a 14.7-gallon fuel tank, ideal for long treks.

That tank feeds the efficient 1049cc Genesis 4-stroke engine. It's technically the same engine as the Yamaha VK Pro II, but you might not guess it by riding both sleds. The Bearcat 7000 has more punch off the line thanks to the gearing, but it also can be tamed for towing heavy loads with the new Wide Range 3 (WR3) transmission. It offers high, low and reverse like the other two sleds here, but it adds a "super low" gear for the real heavy hauls.

The super low gear is designed for heavy load towing or traveling in deep snow at under 20 mph. Think hauling building materials. The "low" gear is more of a mid-range option for lighter loads at 20-40 mph. Think ice fishing portable and gear. High gear is what you'd expect from traditional snowmobile gearing. It's also quiet and efficient. Think trail cruising, which you can do 2-up or solo thanks to the detachable passenger seat.

The Bearcat isn't capable of shifting on



the fly like the Ski-Doo, but a rev limiter maxes out the rpm's at 2500 while in neutral. You'll have peace of mind knowing you won't accidentally wreck the transmission with an itchy throttle thumb.

A new front-mounted auxiliary radiator works together with a tunnel-mounted heat exchanger to cool things under the hood. This allowed Cat to remove the rear heat exchanger that was prone to ice build-up. And should you ever need to access anything under the hood, you'll be delighted to find it's a flip-up design. Side panels are also removeable. It's the coolest thing since OEMs quit making flip-up hoods!

A new articulating XTRA-ACTION rear suspension gets added as well. Geometry changes have increased the range of movement of the articulating portion of the rear skid. There is four times less force being required to initiate the articulation. What does that mean? It's easier to back up in deep snow, and the 20x154x1.375-inch track has a shorter feel to it while driving forward. This update really makes the Bearcat less of a bear on the trail.

The front end uses the Arctic Race Suspension (ARS), but it gets new ProUte-10/8 skis. The skis are tapered

from 10 inches at the front to 8 inches in the back. The ski tip also starts to curve up further back toward the ski spindle. Snow conditions were not great for testing the full capabilities of the new skis, but they should climb on top of the snow easier than the previous ski. They also offer a very wide range in adjustable ski stance (37.5-43.5 inches).

Other perks for the Bearcat 7000 XT include a reverse light for hitching up in dim light, a tall windshield, added storage under the seat, and a trailer hitch.

## WORKING IT OUT

So which of these workhorses should you hitch your wagon to? That depends on personal preference, and my preference is for the Ski-Doo Expedition Xtreme. I wouldn't hesitate to run this down the trail with the guys, and I can still use it to get a few projects done at the cabin. It's a performance sled trapped in a utility sled's body. Or is it the other way around?

If I wanted a purebred Clydesdale to haul almost anything anywhere, I'd lean toward the Bearcat 7000 XT. The WR3 transmission with "super low" gear and the engine cooling can really do some work. It's not quite as smooth as the Xtreme on the trails, but the new articulating rear suspension is an awesome plus.

If I'm looking to check off the "honey-do" list and take "Honey" for a sunset cruise, the Yamaha VK Pro II is what I'm going with. The 2-up riding is the best of these three. It's comfortable, it costs the least, and the new SingleShot rear suspension works great when riding double. 🐻

## AmSnow side-by-side sled specs

SLED	2016 Arctic Cat Bearcat 7000 XT	2016 Ski-Doo Expedition Xtreme	2016 Yamaha VK Pro II
ENGINE	Yamaha 1049cc liquid EFI triple, Genesis 4-stroke	Rotax 800R E-TEC liquid, 3-D R.A.V.E., direct-injected 2-stroke twin	1049cc EFI triple, Genesis 4-stroke
HP	135*	156.4*	135*
DRIVE	TEAM Rapid Response primary, TEAM Rapid Reaction BOSS secondary	TRA VII primary, QRS secondary	YVXC, 3-speed transmission
EXHAUST	3-into-1 stainless steel pipe with stainless steel muffler	Single tuned pipe, baffle muffler	2 valves, rear exhaust
SKI STANCE	37.5-43.5 in. adj.	38.4 or 40.1 in.	38.4 in.
FRONT SUSP.	ARS w/ Arctic Cat gas IFP shocks (9 in. travel)	RAS 2 w/ HPG Plus R shocks (8.3 in. travel)	Independent, double wishbone w/ hydraulic, gas cell shocks (6.3 in. travel)
REAR SUSP.	XTRA-ACTION w/ adj. torsion springs, fiberglass overload springs and torque-sensing link rear arm w/ Arctic Cat gas IFP shocks (13 in. travel)	SC-5U w/ HPG Plus center shock, KYB Pro 36 EA rear shock (16 in. travel)	Pro Comfort w/ flip-up rails w/ 40mm KYB HPG shocks (11.3 in. travel)
TRACK	20x154x1.375	20x154x1.75	20x154x1.5 Cobra WT
FUEL: TANK/OCT.	14.7 gal. / 87 octane	12 gal. / 91 octane	11.8 gal. / 87 octane
DRY WEIGHT	NA	625 lbs.	NA
PRICE	\$14,499 US / \$16,599 CA	\$14,849 US / \$16,549 CA	\$12,999 US / \$14,399 CA
PLUSES	Back-up light, under-seat storage, flip-up hood	Superb trail manners, plenty of zip, cargo rack AND tow hitch	Comfy 2-up sled, shocks calibrated for heavy loads





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## WE ALL BEG OEMS FOR SOMETHING NEW EVERY YEAR ... WELL, HERE IT IS!

STORY AND PHOTOS BY STEPHEN W CLARK

**Snow bikes have a long history. No, seriously! They do!** Over several decades, there has been no shortage of manufacturers that have tried to make a viable one-skied vehicle, or a “motorcycle on the snow.”

In one way or another, these bikes have always fallen short of being a viable alternative or a true competitor to the traditional snowmobile. However, modern single-ski snow bikes have gained ground in popularity and usability over the last few years.

The main reason for this skyrocketing demand is the advent of better track conversion kits for dirt bikes.

You may have glimpsed them at snow shows, but if you haven't heard, Polaris recently acquired Timbersled, and Arctic Cat teased a new “snow vehicle” known as the SVX 450 at Hay Days. Both moves by major manufacturers should be proof that snow bikes are a big thing and are clearly here to stay.

The sport of snow biking is evolving at an alarming rate with a ton of different options. We thought it important to spend a few days tracking down the right people to talk to, pour over specs and info online and in dealerships, and finally compile this overview of what's new in the exciting sport of snow biking, and where it might be headed.

### What's the big deal?

If you have never been around a snow bike, then you might be wondering what the attraction is. Why would someone want to give up their 120-hp snowmobile for a 50-hp dirt bike that requires a lot of balance? The riding experience is so completely different between a snowmobile and snow bike that it's hard to even compare the two.

Off-trail snow bikes easily carve through the snow and thrive in tight, technical terrain. They can cut a sidehill with very little rider effort, and they can fit through really narrow

# NOT?



## OFF-TRAIL SNOW BIKES EASILY CARVE THROUGH THE SNOW AND THRIVE IN TIGHT, TECHNICAL TERRAIN.

Timbersled Suspension Strut (TSS). This system uses a FOX air shock between the bike frame and the track kit as opposed to the solid strut that was used in the past. With TSS, the snow bike has two separate rear suspension systems, creating 20 inches of total travel and providing a pivot that gives the snow bike more of a dirt bike feel. Other updates include a Convex pivoting rear suspension, where the front suspension arm articulates left to right. This allows the track to conform to terrain, and the amount of articulation is adjustable to rider preference. Also new is a Convex 2.5-inch lugged track with a profile shape more like a tire. This improves trail and hard pack handling.

There is a lot of buzz about Timbersled at the moment, much of it fueled by the Polaris acquisition, but it isn't the only company building track conversion kits. Once we started digging into this industry, we began finding more and more manufacturers of conversion

kits. Some were simple wheel replacement kits using the bike swingarm, from the SnoXcycle and the AD Boivin Explorer all the way up to the very exotic carbon fiber Yeti kit.

The Canadian Yeti kit is possibly the Ferrari of the conversion kits out there. Judging by the Yeti website, product video, the kit itself, and talking to them, these guys seem to know what

**REAGAN SIEG** has quickly made a name for himself as one of the top riders in the emerging sport of snow biking. Coming from a freestyle motocross background, this Canadian rider is hitting huge jumps and drops on his single-skied machine. Should we be considering these bikes truly snowmobiles?

tree gaps. Trail performance also seems like it is improving with new ski designs, but it's not likely that a snow bike will give a Ski-Doo MXZ a run for its money on the trail anytime soon. From our experience, it's difficult to mix snowmobiles and snow bikes on the same ride, as they both have strengths and weaknesses in different terrain. One obvious big benefit to the snow bike conversion kits is having a vehicle that you can convert back and forth between dirt

and snow for year-round use. Plus, a snow bike is different and fun, and it can push you out of your comfort zone, which is a great experience!

### Who are the players?

Timbersled has made quite the impact on the snow bike market in the five or so years they have been producing snow bike conversion kits. Their founder, Allen Mangum, patented the Mountain Horse snow bike conversion system in 2011, quickly growing the

business and attracting attention enough so that Polaris bought the business in the spring of 2015.

The Timbersled kit is compatible with most modern dirt bikes. It employs a snowmobile-style rear suspension mounted in a tunnel-style chassis that attaches in place of the bike's swingarm with a single ski up front. A chain and sprocket transfer power from the bike's engine to a chaincase that turns drivers and a jackshaft. A disc brake provides the braking.

The overall concept of the Timbersled kit has remained the same over the years, but the details of the kit have been constantly evolving. For 2016, there are a bunch of improvements, with the most significant being the



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they're doing. Their kit uses a lightweight molded carbon fiber tunnel with innovative use of aluminum in key places. They use a twin-shock snowmobile-style rear suspension with FOX shocks, and the track is driven using a belt drive that is visible through a clear plastic cover on the outside of the tunnel.

High-end mountain sled manufacturer Crazy Mountain Xtreme is also in the snow bike business with its CMXBK conversion kit. This kit is similar in design to the Timbersled, but it has a belt drive and is made from billet aluminum. The most notable feature is that CMX exclusively uses a dual front ski kit from Raptor. This kit mounts a ski to each fork leg and, with a unique pivot brace, allows the front skis to move independently of each other.

It's not just the adults that are having all the fun, either. There are even conversion kits for kids' bikes; Holeshot Inc. offers a SnoRipper kit for 110cc bikes.

While there are a lot of aftermarket track and ski kits that bolt on a dirt bike, Arctic Cat is poised to be the first OEM since Snowhawk to sell a complete single-ski snow vehicle from the factory. Cat first showed its version at Hay Days, and it would appear that

## THE KITS ALLOW YOU TO CONVERT YOUR VEHICLE BACK AND FORTH BETWEEN DIRT AND SNOW FOR YEAR-ROUND RIDING USE.

it is a Sherco 450 with a track kit from Camso (formerly Camoplast). I'm sure we will be hearing more on this and possibly riding it soon (we assume when the 2017 machines are launched in March 2016), but at press time mum was still the word.

You may be wondering who the heck Sherco is. It's a European manufacturer best known for building trials bikes. Sherco builds a line of enduro bikes, including the fuel-injected 450 SEF-R, which the Cat SVX looks to be based on.

It's too early to tell how this will all pan out, but from Cat's perspective, it seems like a smart move. The OEM saves itself from spendy R&D and tooling costs incurred by building a totally new machine, but it reaps the benefits of offering a new snow vehicle that should be popular with its customers and dealers.

### How it works

Transforming a dirt bike into a snow bike is easier than you might think. According to top snow bike athlete Reagan Sieg, it takes around three hours to take a bike from dirt

to snow with a basic setup. It's debatable which dirt bike offers the best setup. The enduro bikes are good because you get headlights, big stators for accessories and electric start, but the motocross 450's generally rev higher and are lighter. Sieg is partial to the KTM 500, as it has lots of power, electric start, lights, etc.

According to Sieg, you can simply bolt a kit on a bike and go out and have a good time. However, there are a few mods that you might want to consider to make the bike work better in the snow. Airbox modifications are recommended so snow doesn't clog the filter. At a minimum, this includes adding a waterproof pre-filter over the stock filter. If you still experience problems with snow clogging the airbox, you can go as far as completely removing the stock airbox and installing pod filters onto the throttle bodies.

It's also recommended to stiffen up the front forks to balance out the bike and compensate for the different geometry of the track kit. This can be done by increasing pressure on bikes with air forks, or adding springs and valving to conventional forks. Installing some neoprene fork covers to protect the shock seals from ice damage is also a good idea.

Wider, longer footpegs are

**CRAZY MOUNTAIN XTREME** is building a conversion kit called the **CMXBK** complete with a belt drive and dual-ski front end. Pretty wild and certainly fun!

nice, as wider snow boots and snow buildup make it easy to slip off the narrow stock pegs. Handguards, hand warmers and handlebar risers also add some comfort and protection. Some bikes work better with a thermostat installed to build more heat in the engine, allowing it to run at a temperature closer to what it was designed to run at. For riders looking to increase power, there are a lot of options with pipes, programmers, big bore kits and even turbo kits.

### What's next?

It's been cool to see snow bikes capturing the attention of the moto guys who are typically pretty un-interested in snowmobiles. Nitro Circus crazy-man Travis Pastrana and Red-Bull's Ronnie Renner have both spent some time on Timbersleds and publically speak positively of them. Red Bull recently launched a cool web edit about snow biking that features Ronnie Renner, Reagen Sieg and Brock Hoyer, and that blew up online. You can find it at [https://youtu.be/D1c6W8xbF\\_s](https://youtu.be/D1c6W8xbF_s). We highly recommend it! Snow bikes seem to be attracting new riders to the snow, and this growth can only be good for the sport in general.

However, as with anything new, there are some growing pains. With the recent spike in popularity, we have heard of some legal issues with riding bikes on trails in certain states, notably Minnesota. It seems that certain states are tightening snowmobile trail permits even more to specifically exclude snow bikes using the trails. Since a snow bike has the VIN of a dirt bike, it technically isn't a snowmobile and therefore snubbed from the trails. We assume that Timbersled/Polaris and Arctic Cat are actively working to resolve these issues with their



**DUAL SKIS** are used by CMX on their snow bikes. This kit from Raptor offers an innovative dual-ski setup that is compatible with any of the track conversion kits mentioned in this article.



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**TIMBERSLED'S UPDATES** for its newest 2016 conversion kit include a molded intake kit designed for snow, a TSS shock that adds suspension travel and a pivoting rear skid. Innovation is not stopping for these folks!



good as snow bikes are, there are still limitations because the base machine is designed for dirt. Power is a major challenge with the average 450 dirt bike too. The 50 hp it produces is plenty in the dirt, but it pales in comparison to snowmobile horsepower.

Think about a 100-hp bike with all the amenities for the snow (e.g., heated grips, electric start, non-icing throttle bodies, etc.). Manufacturer development is an interesting game, to be sure! Are they really pushing to offer the absolute best product they can, or simply staying one step ahead of their competition? With Cat and Polaris both with real skin in the snow bike game now, we may not be too far off from a true factory-designed and built snow bike, and dare we say possibly dedicated lines from all four snowmobile OEMs!

legal departments, but it's worth checking with your local authorities before putting down bucks on a snow bike. Then there's the matter of patents. Who knows how long

until lawyers begin battling over patent infringements.

Things are moving fast in the world of snow bikes. We know for a fact that Yamaha has been looking at this mar-

ket seriously for the better part of a decade. Imagine if it brought its motorcycle resources to the snow bike market! However, much of the feedback we hear is that as

#### Sources:

- Timbersled: [www.timbersled.com](http://www.timbersled.com)
- Yeti Snow MX: [www.yetisnowmx.ca](http://www.yetisnowmx.ca)
- Holeshot Inc: [www.holeshotinc.com](http://www.holeshotinc.com)
- CMX: [www.crazymtn.com](http://www.crazymtn.com)

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STORY AND PHOTOS BY STEPHEN W CLARK

**Like a sled that's** equally at home pounding through bumps as it is floating through the deepest powder? Need a sled built to take a beating? Want to huck your sled off the biggest cliffs or jumps imaginable? If you're the kind of rider that measures a good day of riding in the number of miles flown through the air, then look no further than these freeride mountain sleds.



All three of the 800cc engine manufacturers offer a sled in this category. Arctic Cat has the HCR, Polaris the RMK Assault, and Ski-Doo the Freeride. These sleds serve double duty between back-country freeride and hillclimb race machines. You may be wondering what the differences are between these machines and the standard M, RMK or Summit machines. They use the same engines and chassis but feature higher-end suspensions, wider front ends and bracing, making them more durable than their lightweight, deep snow-focused cousins. They are also premium models, so they get all the niceties associated with higher-end sleds (e.g., upgraded handlebars, shocks, colors and, of course, a high-end price tag too).

**HILLCLIMB RACER** Arctic Cat's HCR was born and bred for hillclimb racing. It comes with a race-approved tether and suspension capable of handling race courses.

### You've got options

The Arctic Cat HCR hits the market with the most race-focused spec sheet. It comes with a race-approved tether and a racy Cat-green paint scheme. Suspension is handled by FOX Float 3 EVOL front shocks, a FOX Zero Pro center track shock and a FOX Float 3 rear shock. Like all the M sleds, the HCR gets a completely redesigned front end for 2016 with a new spindle design, A-arms and a completely new ski. Ski stance is adjustable from 38.5 to 42.5 inches, a full four inches wider than the other M models. Other features unique to the HCR include a stiffer, 80 Durometer version 2.6 Power Claw track and the absence of a rear tunnel cooler.



With a bold Lava Red and Manta Green paint scheme, it's hard to miss Ski-Doo's Freeride. Built on a reinforced REV-XM RS chassis, the Freeride uses KYB Pro 40 remote reservoir shocks with compression and rebound adjusters. It also uses a unique sway bar quick-disconnect to make the adjustable 38.4-40.1-inch ski stance easier to sidehill. The 800R E-TEC engine and the rest of the machine are the same as the Summit models. The Freeride is available in three different track lengths: a mountain-focused 146 and a 154 (both with tMotion pivoting rear suspension), or a more trail-focused 137 model with rMotion rear suspension.







Polaris pioneered this segment with the RMK Assault back in 2009, and it has continued to grow the Assault brand ever since. For 2016, the Assault benefits from all the same updates to the Pro-RMK, including the new raised AXYS RMK chassis and Cleanfire 800 engine. The Assault uses a chaincase instead of the belt drive found on some Pro-RMK models, and it features Walker Evans remote reservoir shocks. It also features a wider adjustable 41.5-43.5-inch ski stance, and it's available in a range of track options, such as the 155 Peak 2.25-inch track for mixed hard pack and soft snow, a 155 Series 6 2.6-inch mountain track and a 155 Series 7 3-inch for the ultimate in deep-snow traction. In addition to the Assault and Pro-RMK, Polaris also offers the



**POLARIS SKS IS BACK!** The SKS is a new model with a very traditional Polaris name! For 2016, this mountain machine slips in nicely between the super lightweight and deep snow-focused Pro-RMK and the more rough terrain-focused Assault.

## WHAT EXACTLY IS AN SKS?

Polaris snuck a new model into the mountain category for model year 2016 with the SKS. **SKS stands for “Snow King Special,”** and it's a nod back to older models that won the Jackson Hole hillclimbs back in the day. With a name tied to hillclimb heritage, it's odd that the Assault will still be the sled of choice for hillclimbers. This third model is slotted between the super light, deep snow-focused Pro-RMK and the burly, rough terrain-focused Assault. The SKS uses the same 800 H.O. engine and AXYS RMK chassis, but it features a front bulkhead cooler and additional bogey wheels for improved performance in low-snow conditions. The SKS also gets a chaincase instead of the Pro-RMK's belt drive, and it gets the Walker Evans Piggyback shocks that fill a place between the monotube shocks on the Pro-RMK and the stiffer needle shocks on the Assault. The SKS uses the narrower 39-41-inch adjustable ski stance like the Pro-RMK, as well as the 2.4-inch Series 5.1 track that came on 2015 and older Pro-RMK's.

In a nutshell, the SKS is a Pro-RMK with upgraded shocks, a chaincase and additional cooling targeted at riders who spend time riding in lower snow conditions and want a machine that can handle rougher terrain than the super lightweight Pro-RMK. We have ridden the SKS, and it's a great machine. It just seems strange to add a new model into the line when they could have achieved the same thing by adding a cooler option to the massive list of options available on Pro-RMKs during Snowcheck. But what do we know?



“

**THE SKS IS TARGETED AT RIDERS WHO SPEND TIME RIDING IN LOWER SNOW CONDITIONS AND WANT A MACHINE THAT CAN HANDLE ROUGHER TERRAIN THAN THE SUPER LIGHTWEIGHT PRO-RMK.**



# Ski-Doo Freeride

## SKI DOO FREERIDE

It seems like Ski-Doo always saves the debut of its wildest color schemes for the Freeride! The 2016 Lava Red and Manta Green colorings keeps this trend going.

SKS model aimed at a similar category. See the sidebar on pg. 39 for more information on this model.

## No mods needed

These three freerider sleds definitely fill a niche in the market for riders looking for a durable, well-suspended mountain sled. Hillclimb racers rely on these machines in the stock classes, as they are built to handle the hard and rough race courses without any modifications. With chassis reinforcements, chaincases and good shocks, these machines are also great choices for mountain riders who ride in harder snow conditions or spend more time on the trail. However, buyers need to be realistic about the type of terrain and their riding style before deciding on a



HCR, Freeride or Assault as opposed to a standard M, Summit or Pro-RMK. Do you really need the suspension and reinforcements? Or maybe more importantly, are you willing to give up some sidehill carving performance?

For model year 2016, there's quite a bit of new technology in this class, including

Arctic Cat's new front end and Polaris's new chassis and engine. Performance-wise, Polaris's domination of the RMSHA circuit with the Assault is a testament to how well their machine works. And, based on the small amount of time we have spent on the updated AXYS model, it's clear that Polaris has no intentions of stepping off the top step of the podium. The Ski-Doo Freeride is also a solid

performer. Its quick-disconnect sway bar helps the sled perform more like a narrow mountain sled than the other

two. The Cat is fast, stiff and begs to be ridden hard, making you feel like a racer every time you throw a leg over.

## Our take

I have a bit of a love-hate relationship with these freeride sleds. On the one hand, I love the premium suspension, styling and added durability. But a wider front end takes more effort to roll onto its edge, making them more tiring to ride. The suspension packages on these sleds

are a lot stiffer than standard mountain sleds and work great if you ride aggressively. The suspension can be a little harsh, especially for trail riding, but it all comes down to individual riding style and terrain. For a lot of people, these sleds offer a great balance of trail and mountain riding, from hard snow mountain to powder mountain riding.

Personally, I wish we could get a freeride level of suspension on a mountain sled with

a narrow front end. This is now possible with Polaris' nearly endless spring buy options, but it's not available from Arctic Cat or Ski-Doo for model year 2016.

**THE FREERIDE FILLS A NICHE FOR RIDERS LOOKING FOR A DURABLE, WELL-SUSPENDED MOUNTAIN SLED.**



# LET'S RACE!



Snocross.com photos

READY•SET•GO!





# The rumble at the races

2016 RACE SLEDS SET TO SPAR ■ BY ROSS HALVORSON

**T**hree manufacturers recently put out their 2016 race sleds for what's sure to be another slugfest this snocross and cross country season. Here's the need-to-know info on each OEM sled in the ring.

## Polaris 2016 IQ 600R Race Sled

**OF THE FOUR PRO** snocross finals not won by Tucker Hibbert last season, three of them were taken by Polaris riders. They're close, and they're hoping minor suspension tweaks get them to the top.

**Changes include:** Most notably, calibrations in the shock package have been tweaked again. The same aluminum Walker Evans IFS shocks from the previous season are found up front, but both rear shocks now offer the same 28 low-speed positions and 22 high-speed positions as the front. The ski shocks and rear track shock

also offer 16 positions of rebound adjustment. The shock body diameter has been upped from 1.75 inches to 2 inches to offer greater control over shock performance. That being said, we know several Polaris riders already used the 2-in. diameter shocks last season, so this isn't a surprise.

Polaris fans will also have to hope the graphics package will add a few mph to the race buggy for 2016. The familiar red and black color scheme is back with a few improvements. An all-red front end is complimented by a black low windshield and black seat with red accents.



**Engine:** 599cc liquid twin 2-stroke w/ Mikuni Rack – TM 40 carbs, Nikasil-plated cylinders **Bore/Stroke:** 73.8 x 70mm **Drive:** P-85 drive, Lightweight TEAM Roller driven **Brake:** Liquid-cooled w/ Cyclone master cylinder, Phantom dual-piston caliper and Hayes Type 126 pads **Exhaust:** Polaris VES, single pipe **Ski Stance:** 43 in. **Ski:** Saddle-less composite **Front Susp.:** IQ w/ Walker Evans 2-in. alum. IFS piggyback 22 / 28 position high / low speed comp. adj., 16 position rebound adj. (10.3 in. travel) **Rear Susp.:** IQ w/ Walker Evans coil over w/ piggyback 22 / 28 position high / low speed comp. adj. center, piggyback 22 / 28 position high / low speed comp. adj., 16 position rebound adj. rear (13.9 in. travel) **Track:** 15x128x1.75 Sno-XT **Rec. Fuel:** 92 non-oxygenated Premix 32:1 ratio **More:** Increased torsion spring rate, updated graphics package

## Arctic Cat 2016 ZR 6000 R SX



**THE HOLESHOT SEEMS** to be about the only part of a snocross race Team Arctic isn't always winning these days. Their new "Hole Shot" device is aimed to fix that, and a slew of other updates will try to keep Arctic on the winning track.

**Changes include:** Improved



rear spar tunnel mounting brackets, reinforced foot pocket and optional X-32 brake mounting feature on the ProCross chassis. A new 15x129x1.75 SX track boasts 20% better traction and requires a new 2.52-in. pitch, 9-tooth track drive assembly. New brake pads come with increased backer thickness, and a new lightweight stainless brake rotor should reduce warping and increase stopping power. The FOX 1.5 ZERO C center track shock has wide-range hand-adjustable compression with a revised calibration. A new rear arm-adjust "Hole Shot" device is designed to get Team Green out of the blocks quicker. Borg Warner chain and sprockets should add strength, as will a new rear suspension rail cap, and a lightweight torque-sensing link arm. Revisions to the belt tensioner bolt, PTO engine plate assembly and mount orientation, and exhaust temp sensor were also added to upgrade durability. A new steering support reduces weight, and the vent lines on the carburetor have been removed. A new resonator outlet seal prevents snow packing in the belly pan. The optional VIP Data Acquisition system is also still available.

**Engine:** 599cc liquid twin 2-stroke w/ heated Mikuni TM40mm rack w/TPS **Bore/Stroke:** 73.8 x 70mm **Drive:** Arctic RPM sensing drive, TEAM (TSS-04) driven **Brake:** Race hydraulic master cylinder w/ 2-piece stainless disk **Exhaust:** APV w/ tuned ceramic-coated pipe, pipe sensor and canister **Ski Stance:** 43.5 in. **Ski:** C&A Pro XT **Front Susp.:** ARS w/ FOX Float 3 EVOL RC shocks (10 in. travel) **Rear Susp.:** Slide-Action w/ FOX 1.5 ZERO C center shock, FOX 2.0 ZERO RC rear shock (13.5 in. travel) **Track:** 15x129x1.75 Snocross 2-ply **Rec. Fuel:** 92 non-oxygenated Premix 32:1 ratio **More:** High-grip seat cover, off-set ski spacers for adj. stance

## 2015-16 Race Series Schedules

### ISOC AMSOIL NATIONAL SNOCCROSS

**Nov. 27-29:** AMSOIL Snocross National, Duluth, Minn.  
**Dec. 11-12:** Fargo Snocross National, Fargo, N.D.  
**Jan. 8-9:** Pirtek Snocross National, Shakopee, Minn.  
**Jan. 22-23:** U.S. Air Force Deadwood Snocross, Deadwood, S.D.  
**Feb. 5-6:** U.S. Air Force Snocross National, Salamanca, N.Y.  
**Feb. 26-27:** RAM Trucks Snocross National, Mt. Pleasant, Mich.  
**Mar. 4-5:** Hollywood Casino Snocross National, Chicago, Ill.  
**Mar. 18-20:** Nielsen's Snocross Grand Finale, Lake Geneva, Wis.  
 More info: [www.snocross.com](http://www.snocross.com)

### EAGLE RIVER DERBY (Ice Oval)

**Jan. 8-10:** Vintage Snowmobile Derby  
**Jan. 14-17:** World Championship Snowmobile Derby  
 More info: [www.derbytrack.com](http://www.derbytrack.com)

### WINTER X GAMES

**Jan. 28-31:** Aspen, Colo. (ESPN and ABC coverage)  
 More info: [www.xgames.com](http://www.xgames.com)

### SOO I-500

**Feb. 6:** Sault Ste. Marie, Mich.  
 More info: [www.i-500.com](http://www.i-500.com)

### SKI-DOO GRAND PRIX DE VALCOURT

**Feb. 12-14:** Valcourt, Quebec  
 More info: [www.grandprixvalcourt.com](http://www.grandprixvalcourt.com)

### U.S. X-COUNTRY SNOWMOBILE RACING

**Dec. 19-20:** Gerald Dyrda Memorial Pine Lake, Gonvick, Minn.  
**Jan. 2-3:** Devils Lake North Dakota 250, Devils Lake, N.D.  
**Jan. 16-17:** Park Rapids 106, Park Rapids, Minn.

**Jan. 23-24:** Seven Clans TRF 300, Thief River Falls, Minn.  
**Jan. 30:** Grafton 100, Grafton, N.D.  
**Feb. 10-13:** Seven Clans Winnipeg to Willmar 500  
**Feb. 27-28:** Seven Clans Warroad 200, Warroad, Minn.  
**Mar. 5-6:** Naytahwaush 200, Naytahwaush, Minn.  
 More info: [www.usxcracing.com](http://www.usxcracing.com)

### RMSHA (Hillclimb)

**Jan. 15-16:** Bellevue, Idaho  
**Feb. 5-6:** Bear Lake, Idaho  
**Feb. 26-28:** Afton, Wyo.  
**Mar. 11-13:** Ten Sleep, Wyo.  
**Mar. 24-27:** Jackson Hole, Wyo.  
**Apr. 7-10:** Crested Butte, Colo.  
**Apr. 15-16:** Logan, Utah  
**Apr. 22-24:** Alta, Wyo.  
 More info: [www.rmsha.net](http://www.rmsha.net)

### MIDWEST EXTREME SNOWMOBILE CHALLENGE (MESC Triple Crown)

**Mar. 5-6:** Round 1, Norway, Mich.  
**Apr. 2-3:** Round 2, Bessemer, Mich.  
**Apr. 16-17:** Round 3, Lutsen, Minn.  
 More info: [www.corpowersports.com](http://www.corpowersports.com)

### CANADIAN SNOWCROSS RACING ASSOCIATION (CSRA)

**Jan. 16-17:** International Snowcross GrandPrix, Rouyn-Noranda, Quebec  
**Jan. 22-24:** SCMX/CSRA National Snowcross, Trois-Rivieres, Quebec  
**Jan. 30-31:** Royal Distributing Cup National Snowcross, Barrie, Ontario  
**Feb. 20-21:** AMSOIL Kawartha Cup National Snowcross, Lindsay, Ontario  
**Feb. 27-28:** Western Fair National Snowcross, London, Ontario  
**Mar. 12-13:** Eclipse Financial Cup National Snowcross, Timmins, Ontario  
**Mar. 26-27:** Rockstar Energy National Snowcross, Kitchener, Ontario  
**Apr. 2-3:** Dayco National Snowcross Championships, Barrie, Ontario  
 More info: [www.snowcross.com](http://www.snowcross.com)

### USSA PRO STAR SERIES (Ice Oval)

**Jan. 1-3:** Ironwood Snowmobile Olympus, Ironwood, Mich.  
**Jan. 23-24:** Wausau 525, Wausau, Wis.  
**Feb. 5-7:** Frozen Clash at the Creek, Maribel, Wis.  
**Feb. 13-14:** Fire on Ice, Weyauwega, Wis.  
 More info: [www.ussaprostar.com](http://www.ussaprostar.com)

### NSSR (Straightline Drags)

**Jan. 23:** Kickoff Race, Fairmont, Minn.  
**Jan. 30:** Winter Festival, Howard Lake, Minn.  
**Feb. 6:** Battle on the Bay, Green Bay, Wis.  
**Feb. 13:** Sweetheart Race, Forest Lake, Minn.  
**Feb. 27:** Winterfest Finale, Chetek, Wis.  
 More info: [www.racenssr.com](http://www.racenssr.com)

### COR POWERSPORTS XC SERIES

**Jan. 9-10:** Lac du Flambeau, Wis.  
**Jan. 23-24:** Phillips, Wis.  
**Jan. 30:** Friendship, Wis.  
**Feb. 27:** Baraga/L'Anse, Mich.  
 More info: [www.corpowersports.com](http://www.corpowersports.com)

### EAST COAST SNOCCROSS

**Jan. 16-17:** Hill-X, TBA  
**Jan. 23-24:** Snocross, TBA  
**Jan. 30-31:** Snocross, Bangor, Maine  
**Feb. 5-6:** ESC/ISOC National Combo snocross, Salamanca, N.Y.  
**Feb. 12-14:** Grand Prix de Valcourt snocross, Valcourt, Que.  
**Feb. 27-28:** Snocross, Bennington, Vt.  
**Mar. 5-6:** Snocross, Canandaigua, N.Y.  
**Mar. 19-20:** Snocross, Southington, Conn.  
**Apr. 2-3:** Snocross Finale, Findley Lake, N.Y.  
**Apr. 9-10:** Hill-X, TBA  
 More info: [www.eastcoastsnocross.com](http://www.eastcoastsnocross.com)





## Ski-Doo 2016 MXZx 600RS



**FASTER, LIGHTER, STRONGER** – These were the goals for Ski-Doo's engineers when they built the 2016 MXZx 600RS. Not a bad idea for a sled that finished second in both the Pro Open and Pro Lite classes last season.

**Changes include:** The Rotax 600R engine gets a new

cylinder design through a tight tolerance manufacturing process for more consistent maximum power. There's also a new crankshaft and stator, a new Y-pipe, tuned pipe, and lightweight muffler (6 lbs. lighter) for fast revving performance throughout the power band. A new pDrive roller-style primary

replaces the previous TRA III clutch (more on pg. 46). The new drive features friction-free dual rollers for torque transfer in place of traditional sliding buttons. BRP's exclusive adjustable clickers are now applied to flyweights. The new pDrive also features needle bearings in oversize rollers and a compact

open design that's also 11mm narrower. It's all protected by a new clutch cover that reduces belt operating temps by 68 F. A new lightweight track churning the snow also shaves 2 lbs. and adds reshaped lugs for improved holeshots and durability. A new, patent-pending progressive coupling device is also added for better weight transfer. Finally, a new seat shape provides more room for the driver to maneuver. 🐾

## New Snocross Rules and Classes

New rules take effect for AMSOIL Championship Snocross events in the 2015-16 season, including changes to the Pro Open class and a new class for women. Here's the skinny:

### All Classes

- Racers must use the same sled on the parade lap that they will use in the race immediately following the parade lap.
- Starting line will widen to allow room for all sleds to start on a flat surface.
- Only one crew member will be able to come up to the starting line with their driver. The crew member is required to wear a TekVest and display proper credentials. If the crew member has a pit board, he/she must use a five-foot extender pole in order to stay a safe distance from the track.

### Class Changes

- Amateur class will now be named Sport Lite.
- Jr Novice 10-13 will now be named Jr. 10-13.
- A new women's class called Woodies Jr Girls 9-13 will be added.

### Pro Open

- Heat picks will be randomly computer generated. Last year, racers were placed in heats based on points, but the same riders always seemed to race together. (Pro Lite will continue heats based on points).
- **Pro Open Inversion:** Qualifying will run the same as years past, but will change gate pick for the final. If you are the top qualifier you will receive the tenth pick, and if you are the second qualifier you will receive the ninth pick, and so on. More championship points are awarded in the heats in an effort to reduce the chance of any laying back to receive a better pick in the final.
- **Pro Open Qualifying:** If there are less than 20 racers, the top nine will qualify directly for the final and the rest of the field will go to the LCQ, in which we will pull six riders instead of five. The winner of the LCQ will then be placed first pick on the front row and 2-6 will start in the back row. More info: [www.snocross.com](http://www.snocross.com) 🐾

**Engine:** 594.4cc Rotax 600R liquid twin 2-stroke w/ V-Force reeds, Mikuni TMX 40mm carbs  
**Bore/Stroke:** 72 x 73mm  
**Drive:** Racing pDrive drive, TEAM (TSS-04) driven  
**Brake:** Brembo hydraulic, racing piston insulator, racing pads, racing disc  
**Exhaust:** Y-pipe w/ tuned pipe and lightweight muffler  
**Ski Stance:** 41.93-43.64 in. adj.  
**Ski:** Pilot 5.7R single runner  
**Front Susp.:** REV-XP Racing w/ KYB Pro 40R high/low comp. adj. w/ rebound adj. shocks (9.5 in. travel)  
**Rear Susp.:** rMotion racing w/ KYB Pro 40 high/low comp. adj. shocks (15.5 in. travel)  
**Track:** 15x129x1.75  
**Rec. Fuel:** 92 non-oxygenated Premix 33:1 ratio  
**More:** High-grip seat cover, offset ski spacers for adj. stance





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LET'S  
RACE!



**NEW DRIVE!** Ski-Doo's 2016 racer got many upgrades (including to the track and engine), but the big news is the new primary roller clutch.

**CLUTCH MOVE!** The new roller clutch uses three traditional flyweights, with five positions of clicker adjustments.

# 2016 race clutching

INSIDE SKI-DOO'S NEW PRIMARY ROLLER CLUTCH! ■ BY OLAV AAEN

**L**et's go racing! That was the reaction from many in the crowd when Ski-Doo unveiled its new clutch at Hay Days 2015. This new roller clutch is only going to be used on Ski-Doo race sleds this year, but we all know that

what wins on Sunday usually sells on Monday! If all goes smoothly, we expect to see this clutch on consumer model sleds very soon.

The roller revolution continues with this new primary roller clutch for the Ski-Doo snocross racers. It's nothing unheard of, or all that new, as rollers were first introduced in the 1990s to reduce friction in the secondary clutches.

The advantage of quicker reacting clutches on both belt

life and power transmission output quickly led to it being adopted for most production snowmobiles.

Polaris, Arctic Cat and Ski-Doo have all used secondary roller clutches on their race sleds for years, but Ski-Doo is the first to trade its venerable TRA for a primary roller clutch.

## What's it good for?

The secondary roller clutch cuts down on friction by eliminating the torque buttons of a

button-style clutch, and it improves efficiency by allowing more consistent side force on the belt. This reduces power-robbing belt slippage and lowers heat input into both the belt and the clutch sheaves. The same advantages can be had by introducing rollers instead of buttons on the primary clutch, but this has proven to be a much more difficult engineering challenge.

Rollers on primary clutches must live in a much harsher environment. In the primary, rollers are subject to not only the firing pulses from the piston, but also several orders of engine vibrations, including torsional nodes from the crankshaft. Rollers need side clearance to work smoothly, and this means tight toleranc-

es to prevent rattle noises at idle. Primary roller clutches have been available from the aftermarket since the late 1990s, and they went thru many stages of development before becoming reliable for high-performance engines like large triples and turbo sleds. It quickly became clear that reducing friction from the torque buttons on large, high-torque engines improved belt life and shift patterns.

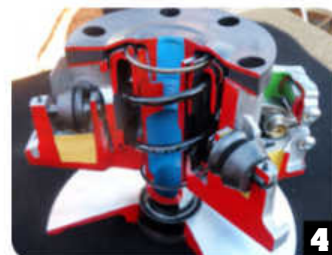
## Ski-Doo does it!

Looking at Ski-Doo's new primary clutch, it's obvious that the OEM has spent many years addressing many of the problems associated with roller primaries, and as a result it introduced a number of new and innovative items. The first



item is the twin roller setup. The top conical roller transfers the driving torque when the belt system is under power, while the thinner bottom roller takes up slack when the engine decelerates or reverses. This prevents any “rattling” at idle, as both sides are in contact at the same time, but in different directions.

The clutch operates with three flyweights, but these are wide and thin for better contact with the rollers. Built in is an eccentric pivot, which provides five “clicker” positions that can be adjusted by loosening a bolt on the flyweight. Additional washers can be placed on this bolt to fine-tune the weight. Each “clicker” position changes the shift speed by approximately 150 RPM. The larger roller runs on a needle bearing to further reduce shifting friction.



The clutch has only a movable sheave and an outside cover like Ski-Doo's new eDrive clutch, but a large rubber dampening donut on the driver cover undoubtedly dampens the engine pulses

and vibration inputs before they reach the rollers, allowing the use of smaller rollers.

It will be interesting to see how this works out for the racing teams. Snocross is one of the toughest environments for

**INSIDE SCOOP!** (1) There are double rollers, one large for acceleration, one smaller for reverse. (2) Loosen the bolt on the side of the weight so clicker weight can be adjusted. (3) Larger rollers run on a needle bearing. (4) Between the outside cover and rollers is a rubber dampening ring. (5) The flyweight head is marked to show the clicker settings.

testing products, and any shortcomings will quickly be found and corrected before this new clutch becomes available on production models.

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# 30 years of racing faces

WE SELECT A FEW OF THE INVENTORS, RACERS & CHAMPIONS WHO INFLUENCED 30 YEARS OF SNOWMOBILING ■ BY ROSS HALVORSON

**T**oday's machines and racing are probably more than Carl Eliason conjured up in his wildest dreams. Back in 1924, when he took his prototype Motor Toboggan around the North Woods of Wisconsin, 150+ mph drag sleds were inconceivable. Now, *American Snowmobiler* celebrates 30 years of covering snowmobile racing!

There are thousands who deserve recognition for their contribution to snowmobiles and racing (there are several Halls of Fame dedicated to it), but here are just a few who have earned some well-deserved accolades over the past 30 years. *AmSnow* is happy to share just a few of the stories of these icons. Enjoy!



European Championship. You can catch up with Olav every year at the Ride with the Champs in St. Germain, Wis. HOF Class of 1997

## 5 Pat Mach



The savior of cross country snowmobile racing, Mach spent more than a decade as a Team Arctic racer from 1990

to 2001. He founded the United States Cross Country (USCC) series in 2002 and turned it into one of the premier terrain racing organizations in North America. Mach was known for tirelessly working with the media to bring back the true essence of snowmobile racing. He passed away too young following a snowmobile crash in February 2011. HOF Class of 2015

## 1 Tim Bender



You may know him from his work with Polaris' Team Hentges snocross team, but before that, Bender was one of the winningest Yamaha racers in history. A member of Yamaha's so-called "Dream Team," he notched three straight Formula III Eagle River World Championship Snowmobile Derby victories from 1985 to 1988. He designed and built several Yamaha race sleds, including the SR-V Phazer wide-body racer, among others. Bender worked with *AmSnow* Tech Editor Olav Aaen for many years, testing and tuning sleds. HOF Class of 1999

back. He's largely credited for building much of Team Arctic into what it is today, and he was deeply involved in the creation of such iconic sleds as the 1990 EXT Special and the ZR race sleds. He also is a driving force behind Team Arctic's race program, affording up-and-coming grassroots racers the opportunity to compete. A couple of *AmSnow* Editors and test riders had the pleasure of riding a "race" with Joey in a "media class" a few years back in the I-500 ... but that's another story altogether! HOF Class of 2012

## 3 Steve Houle



Houle founded Speedwerx, a snow performance giant in all forms of racing. He's also one of the masterminds behind Tucker Hibbert's success, and he was no slouch on the track himself. Over his 20-year career, Houle won numerous races and points

championships for Polaris and the Yamaha "Dream Team" in oval, snocross and cross country events throughout the 1980s and 1990s. His son, Jeremy Houle, has kept the tradition alive at Speedwerx and is darn fast on a sled too! HOF Class of 2016

## 4 Olav Aaen



He's one of the original innovators of high-performance snowmobiles, and we proudly call him one of our own. In addition to being *AmSnow's* tech guru, Aaen helped pioneer the ISR (International Snowmobile Racing). Race teams sporting the name Aaen Performance have captured Eagle River World Championships, a Soo 500 win, more than 50 gold medals in the World Series of Drag Racing, five U.S. Snocross World Series titles, four championships apiece in Norway and Sweden, and an overall

## 6 John Wicht III



An extremely versatile racer, Wicht won nearly every major competition in the industry from the early 1980s into the mid-1990s. He won his first Soo 500 in 1988, and for 10 consecutive seasons never finished outside the top four (wins in 1992, 1993 and 1995), racing solo in a race traditionally for driving teams of two. See more on Wicht in our October 2015 issue, pg. 75. HOF Class of 2003

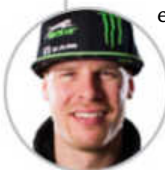
## 2 Joey Hallstrom



Hallstrom became Team Arctic's Race Manager in 1987 and never looked



## 7 Tucker Hibbert



Do we really need to explain this one?

He's been racing since the age of 2, and he's the most dominant snowcross racer of the current generation, slowed only by injuries and the occasional DNF. He's a 13-time X Games medalist (9 gold), two-time FIM Snowcross World Champion (2010, 2012), and is seeking his ninth (fourth consecutive) overall points championship on the U.S. snowcross circuit this season. His father, Kirk, has been there every step of the way, and the two even competed against each other during Tucker's teenage phenom years.

## 8 Kirk Hibbert



Young race fans know him as Tucker's dad. While that is true, many of us still remember Kirk from his

legendary race days of the 1980s and 1990s, when he won everything from cross country (Jeep 500 twice), snowcross (five-time ISOC points champion), and multiple King of the Hill championships at the Jackson Hole World Championship Hillclimb. He was also part of the Arctic Cat design team that introduced us all to the famous ZR sleds in 1992. HOF Class of 2007

## 9 Blair Morgan



Before Tucker, there was Blair. This "Superman" revolutionized the sport of snowcross and modern snowmobile rid-

ing with his stand-up motocross style, always riding seemingly on the edge of disaster. He WAS the REV generation. It paid tremendous dividends for the Canadian, who won five X Games gold medals, 13 snowcross points championships and numerous "Racer of the Year" awards in his career. Unfortunately, while practicing on his motocross bike, Morgan crashed badly and suffered a debilitating spinal injury that ended his career in 2008. HOF Class of 2013

## 10 Roger Skime



He was the man behind all the men behind Arctic Cat's ZR sleds, and his efforts in snowmobile racing date back

50 years! It was Skime's work on the Arctic Cat Panther in the 1960s that introduced design ideas like slide-rail suspension, forward engine mounting and lightweight aluminum construction. He contributed also to slide carburetors, tunable clutching and twin trailing arm track suspensions. Snowmobiling would not be what it is today without him. We talk to Roger regularly, and as of last year he was still burning up the trails and riding sleds to work on occasion. If you want to know what it is like to be humbled, spend some time with this legend. HOF Class of 1998

## 11 Guy Useldinger



Apart from a very successful 20+ years as a pro sled racer, "Dinger" is one of few that can say he raced and won aboard Arctic Cat, Ski-Doo, Polaris and Yamaha sleds in his career. He's per-

haps best remembered, again, as part of Yamaha's "Dream Team" (Tim Bender, Bobby Donahue, Steve Houle and Useldinger). His notable wins include the Soo 500 (1981), and the Formula III Eagle River championship and overall series title in 1992. HOF Class of 2001

## 12 Myron Parent



He's maybe better known today for his work behind the scenes as one of the most respected tech inspectors in snowmobile racing. Hay Days was where most people had a chance to interact with Myron. A great mechanical mind and a humble "tell it like it is" attitude made Myron a "go-to guy" for many race organizations. The first *American Snowmobiler* Super Sled Shootouts in Brainerd, Minn., were teched by Myron.

## 13 Clifford John (C.J.) Ramstad



There really isn't any aspect of snowmobiling Ramstad hasn't touched. In 1983, he helped launch the Snowmobile Hall of Fame in St. Germain, Wis., which has honored many noteworthy people in the industry, including a few listed here. He was also one of the folks behind the inaugural Jeep 500 in 1987. His contributions to snowmobile racing are too numerous to name. Ramstad was always well liked, and it was not out of the ordinary for C.J. to be found in a Hawaiian shirt and a goofy snowmobile hat at many industry events. HOF Class of 2008

## 14 Norman Ball III



Ball could be credited with designing the blueprint for small-budget drag racing. He did it all –

from driver to head mechanic to owner – in his grass drag racing career, which lasted until 1999. An intense competitor on the track, his "git-r-dun" attitude earned him 16 SWDRA Driver of the Year awards, three Minnesota Cup wins, a Michigan Cup victory, and nine Minnesota Fast Time titles. His biggest win may have been showing what was possible with a small-time race operation that spurred the growth of grass drag racing. HOF Class of 2013

## 15 Toni Haikonen



"The Flying Finn" was one with his machine, and his blazing speed produced snowcross wins around the

globe. Prior to coming to North America in 1993, Haikonen was a Finnish national champion and a Scandinavian champion. He changed the sport in 1995 when he began "doubling" the jumps at Canterbury Park. He took home the first X Games snowcross gold medal in 1998 and helped launch snowcross into orbit. Greats like Morgan, Hibbert, and more took notes from Toni. HOF Class of 2012

## 16 Mark Maki



If you've ever been to a watercross race, then you can thank Mark Maki. It is his inno-



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vation and imagination that have turned the sport into a summertime spectacle. His clutching and chassis setups allow sleds to handle waves and make tight turns in water, which enabled the advent of oval racing on open water. He also has 12 high-point watercross championships to his credit in his 20+ year career. Grantsburg anyone? Check it out! HOF Class of 2007

## 17 Herb Howe



Howe won the inaugural Winnipeg-to-St. Paul I-500 in 1966 and competed until 1976, but his contributions to racing remained strong through 1994. His passion for snowmobile endurance racing kept the discipline thriving into the 1990s. He was the man behind the Jeep I-500 between Thunder Bay, Ont., and White Bear Lake, Minn., from 1987 to 1994. HOF Class of 2015

## 18 Thomas Rager Sr.



The architect of two major race programs, Rager Sr. first built Ski-Doo into a powerhouse factory program by changing the brand's focus to stock sled racing in all arenas. It wasn't long until Ski-Doo was winning championships in all forms of snowmobile racing. He repeated the task with Polaris from 2000 to 2012, turning a veteran corps of racers into immediate success stories while fostering the raw talents of young racers for sustained success. His son has carried his torch in the race directing program at Polaris as well! HOF Class of 2014

## 19 Robbie Malinoski



One of the few snocross racers who can claim he's raced all four major OEM brands, Malinoski won major events on three of them. He took home the overall points championship in both Pro Stock and Pro Open classes in the 2005-06 season and delivered Yamaha's first-ever 4-stroke

and delivered Yamaha's first-ever 4-stroke



snocross win in 2007. His career accomplishments also include two X Games medals. Probably one of the nicest guys you will ever meet, "The Bull" (as many called him) wasn't a pushover on the track and never backed down. Robbie is still involved with ISOC and recently managed Team Leighton.

## 20 Jacques Villeneuve



If it had an engine, Jacques raced it. His name is synonymous with racing royalty. He's the first three-time Eagle River World Championship winner (1980, 1982, 1986). It was his never-quit spirit and tireless work ethic that made him an ice oval legend. Even multiple crashes resulting in serious injury couldn't keep Jacques away from the track. He finally hung up his racing bibs in 2013 after nearly 40 years of competition!

## 21 Marcel Fontaine



A successful oval racer in the 1970s, Fontaine left a lasting legacy as a race director across all forms of snowmobile racing. It was his work for and with nearly every race sanctioning body in North America that brought a new degree of professionalism, fairness and, most importantly, safety to the sport, earning him the utmost respect throughout the industry. HOF Class of 2012

## 22 Tom Zernia



Snowmobile racing would not be what it has been over the last 30 years without his efforts. As one of the founders of ISR in 1979, he's had a hand in creating safe racing and fair play across all disciplines. ISR continues to be the body that all snowmobile racing relies on, and its members cross all facets of the snowmobile industry, not just racing. HOF Class of 2016

## 23 Brad Pake



You'd be hard-pressed to find a more dominant cross country racer from the 1990s. Of his many snocross and cross country race victories aboard his beloved ZR Cats, none stand out more than his consecutive I-500 (White Bear Lake, Minn., to Thunder Bay, Ontario) titles in 1995 and 1996. These were glory days of lots of snow and big manufacturer support. Brad was on top while the industry was on top. HOF Class of 2016

## 24 Jack Struthers



Struthers spent the majority of his cross country racing career out west, where he claimed five consecutive championships (1990-1994) racing three- and two-man team classes in the Rocky Mountain Cross Country circuit. A three-time winner of the Ontario-Minnesota I-500, he also won all four Pro classes (440 Stock, 600 Stock, 600 Open, Open) at the MRP West Yellowstone Snocross finale in 1995, as well as an MRP points championship in 1996. Jack also went on to be successful in the aftermarket business. HOF Class of 2004

## 25 Kenneth Konop



His race career was not necessarily the stuff of legend, but his contribution to the sport resonates with every single racer on a sled today. He invented the first safety product to protect a rider's torso after the unfortunate death of his wife, Jacque, at a snowmobile race. The "Saf-Jac" (named after Jacque) was the first generation of protective vests required to be worn by racers and crew at all snowmobile race events. Every AmSnow test rider is now required to wear a protective vest, and it all started with Konop. HOF Class of 2009

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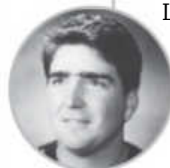
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## 26 Mike Houle



Over a two-decade ice-Lemans and oval racing career, Houle amassed five Eagle River wins and multiple USSA High Point championships in the Formula III class.

He proved his mastery of sled setup with two more Eagle River World titles (1999, 2000), racing the Sprint classes with Champ sleds. HOF Class of 2009

## 27 Ted Otto



Here's another member whose impact on snowmobile racing is now seen each and every race day. Otto introduced the tether kill switch to the sport, which has saved many lives, sleds, and egos.

He's also highly regarded for introducing the likes of NBC and ESPN to snowmobile racing. His work as a flagman at tracks around North America is legendary! HOF Class of 2005

## 28 Frank Neuman



Many ice races (straightline or oval) simply would not happen without the "Shaver Man." Neuman built his own ice shaving machine back in 1999 to keep his family of racers practicing on safe tracks.

Since then, he's spent the better part of two decades hauling his shaver to prep dozens of ice tracks around the snowbelt each winter. Check out a story on Frank in our December 2014 issue (pg. 52).

## 29 Levi LaVallee



His racing is often overshadowed by his other death-defying snowmobile feats, including New Year's Eve long jump world records and double backflips.

Arguably one of the most approachable and energetic personalities in the sport, "Leapin' Levi" was also a wicked-talented racer. This 2008-09 Pro Stock overall snocross points



champion is one of the most influential figures still in the sport.

## 30 Brian Dick



He's raced nearly every major cross country race in North America, including the Iron Dog. He's won most of them, including the Soo 500, USCC high-point titles, etc. He continues to contribute to racing and is constantly innovating as one of the engineers at Arctic Cat, where he and his team have produced some of the most dominant race sleds in recent memory. His ideas show up in consumer sleds on a regular basis.

## Two more ... Editor's picks!

### 31 Tom Earhart



A true snowmobile innovator, Earhart broke national snowmobile speed records four times throughout his career, his last being a 177.04mph run on the Arctic Cat Silver Bullet in 1986. HOF Class of 1994

### 32 Les Pinz



Pinz is the proud owner of more than 50 years of snowmobiles & experience! His racing career was over before qualifying for this '30-years' article, but it included high point honors through the 1960s and a World Series Class Championship in 1971. Today, his preservation of racing past and vast knowledge of sled development ensure today's racers understand the roots of the sport. He is also *AmSnow's* vintage expert and is still testing all the newest sleds as an *AmSnow* test rider. ISHOF Class of 2011

## American Snowmobiler 2015 Ride More Sweepstakes - OFFICIAL RULES

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**2. Sweepstakes Period.** The Sweepstakes begins on September 1, 2015 at 12:00:00 a.m. Central Time, and all entries must be transmitted online no later than December 31, 2015 at 11:59:59 p.m. Central Time.

**3. How to Enter.** To enter, complete the Sweepstakes Official Entry Form online at AmSnow.com/sweeps with your name, address, city, state or province, and ZIP or postal code, and then click on the SUBMIT MY ENTRY button. You may submit only one entry through the Sweepstakes Online Entry Form during the Sweepstakes Period. However, when you submit your entry online, you will receive a link that you can share on Facebook, Twitter, Google Plus or by email; you will automatically receive three additional entries for each person who enters the Sweepstakes using that link. The online entry form must be filled out completely to be eligible. This Sweepstakes is in no way sponsored, endorsed, administered by, or associated with, Facebook, Twitter or Google Plus. Entries from any person submitting more than the stated number will be disqualified.

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## SINGLE PURPOSE

**SLEDS** During the snocross boom of the 2000s, OEMs built their race 440s with one thing in mind: winning on the snocross track.



# How to convert race sleds



Morphing 440cc snocross machines into better trail sleds ■ BY JOE RAINVILLE

**T**he heydays of snocross were ruled by 105+ hp, 440cc fire-breathing, race gas-swilling, purpose-built machines. They were uber-light, with big tall tracks and super aggressive clutching to pull fast holeshots. Suspensions were set up to handle monster moguls and double jumps on supercross-style tracks. In the right hands, they were winners. In the wrong hands, they could quickly lead to painful hospital visits.

In 2008, the new dual purpose 600cc snocross/cross country race sleds hit the track, ending the reign of the mighty 440s. Except for some purists and low-budget racers, the 440s were basically put out to pasture. What would become of the thousands of high-strung thoroughbred race machines? Limited cooling and fuel capacity, hostile compres-

sion ratio engines with aggressive timing curves, trail-unfriendly 1.7-inch track lugs, and pre-mix leaded race-fuel requirements conspired to make for great racing, but poor resale at season's end. The previous generation MXZx, Pro-X and ZR 440 racers could often be sold at or near "racer net" at the end of the season. Strong resale enabled upgrading to





**ALL THE 2005 CAT 440 Sno Pros** came with wheel kits packed loose. While they weren't needed for snocross, they are needed for trail use to prolong hyfax life.



**ENGINE MODS:** Machined heads or the '02-'03 lower compression 440 heads, ignition box set back or recurved to lower octane requirements, bigger carb jets.



**YOU MAY WANT** to consider revalving the original shocks. The factory settings on a 440 Sno Pro make a "6000 RR" look pretty plush by comparison.



next year's latest and greatest machines. Unfortunately, while the snocross-specific 440s from 2003 to 2007 were amazing, some of their values at the end of the season were not.

### Getting 440s on the trail

Each of the three major brands' 440s required some effort to make them "trailable." Some were easier than others. The 440 Ski-Doo REV of the mid-2000s may have been one of the easiest to convert. The tracks were a standard 121-inch length with a 2.52-inch drive lug pitch and big lugs, so an easy fix of a shorter lug track was a direct replacement. Ski-Doo also used an innovative replaceable "power dome" combustion chamber insert

that could be replaced to lower compression ratios down to pump gas-tolerable levels. In addition, the small five-gallon tank was directly interchangeable with larger units from the standard trail sleds.

From their release in 1993, Cat's ZR race sleds were a dominant force in snocross and cross country racing right up until the 2002 Firecat racer was released. But the narrow Firecat had its work cut out for it when it came to keeping pace with the new Ski-Doo REV-based 440 racers released in 2003. To remain competitive, Cat came out with a chassis only used on 2004-2007 440cc snocross race sleds. It moved the rider up and forward from the original Firecat

location. Despite what could be seen as reaction to the success of the REV, the Cats started to regain the sharp handling they lost in the transition from ZR-based racers.

Cat marketed the 2002 Firecat-style "ZR 440" as a dual-purpose racer. It ran on pump fuel (at least until you cranked up the timing advance) and had a large fuel tank with oil injection and full cooling capacity. For 2003, the sled was tweaked to run on pre-mix race fuel, and the track lug jumped up from 1.375 inches to 1.5 inches. The coolant system capacity was also reduced.

If that wasn't enough, things really changed for the 2004-2007 Cat 440s. These



**THE BOTTOM** of the seat support and first layer of foam need a lot of cutting to fit the new tank. Once the seat cover is re-stapled, you still have a stock appearance and a total of 9.7 gallons of fuel.



sleds were put on this planet for one reason: to race snocross. They had one cooler welded into the chassis bulkhead, a unique five-gallon fuel tank, a taller and flatter seat, a deep, straight tunnel with no "ETT" kick-up at the rear, a 1.7-inch lugged track and higher compression heads that required 110 Octane race fuel mixed at 33:1 with oil.

The handling kept improving with innovations like floating ski center distance and the rear suspension that "floated" the front arm in 2005, along with a racer-specific 3-inch drive lug pitch. Then came torque limiting drive axles in 2006, and an adjustable upper steering shaft position in 2007, but only a very few 2007s were built.

Polaris racers of the 2005-2007 era were as snocross-specific as the Cats, with small fuel tanks and high-strung race fuel motors, but at least they had a standard-size track that was easy to replace with a more trail-friendly lug height. Everything that made these sleds great racers made them difficult to use for any other purpose, but not impossible.



### Race sled afterlife

2005 was a unique year in snocross racing. In what may have been the most popular year for the sport, the three 440 racers from Arctic Cat, Polaris and Ski-Doo seemed to have reached "parity." All the sleds, including the new Polaris IQ racer, Ski-Doo REV and the Cat Sno Pro 440s, were all nearly equal to each other.

Some of the retired limited production machines went on to compete in other venues (e.g., drag racing, hillclimbs,



**CAT ONLY DRILLED** one set of holes to mount the factory flap, but more were added as the old flaps were torn off. A new taillight lens, snowflap and grab bar really cleaned up the appearance of the old girl, while the stud rash on the tunnel preserves the history of this old war horse.

etc.), but a small group of enthusiasts saw the potential in converting them to trail sleds. Custom aluminum fuel tanks were fabricated, extra coolers were machined where needed, compression ratios were reduced, CDI boxes were re-curved, and shorter lug tracks were installed to tame these rebels into fun, lightweight open country riders, or ditch bangers. Trail-converting 440s became something of a cottage industry.

But change was on the hori-

zon. Interest in cross country racing was increasing, as was the demand for sleds that could potentially be raced in snocross or cross country with interchangeable parts. In addition, 800cc mod racers had been phased out for 600cc limits. Finally, there were few (if any) 440cc consumer sleds to support the "race on Sunday/sell on Monday" theory, and building only a few hundred 440cc racers was an expensive proposition for the manufacturers. For the 2008 model



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year, the stock class was bumped up to 600cc to better align with the meat of new sled demand.

### Why ride older race sleds?

So what is attractive about these now 9- to 13-year-old warriors? A few things to note about these past racers are their excellent ergonomics, light weight and rarity. They still have somewhat of a "cool factor," even when compared to modern muscle. For example, Polaris is still using updated versions of the 2005 racer as their current 600cc competition model, although Cat and Ski-Doo are a generation or two past their '05 versions. None of the 2003-2007 racers were built in any large quantity (I'm guessing in the 300-400 sled range). The mods were even scarcer. And some guys just like building custom sleds, or maybe preserving their race history.

So where would a guy find one of these sleds? I would definitely recommend some of the large swap meets like Hay Days, held in North Branch, Minn., in early September; Princeton, Minn., held two weeks earlier in late August; the A-1 Show in central Michigan in early November; or one of the many local swaps held in Maine, New Jersey, the Dakotas and in locations further west. These swap meets are also great places to find new factory clearance or used parts.

The barn-fresh 2005 Arctic Cat 440 Sno Pro featured here was sitting untouched since her last race in the winter of 2009. This particular example was raced for five tough seasons in and around the East Coast in the former BEST and RMR circuits. The goal of this conversion was not to restore the sled to like-new condition, but to trail-convert her while trying to preserve some of her racy character and history.

Fortunately for us, the cottage industry supporting trail conversions is pretty well established. Trail Tank sells larger gas tanks for the Cat and Polaris 440s that are nearly double the size of their original five-gallon tanks. Custom heat exchangers can be purchased from several sources, like Fabcraft. Jetting and clutch tuning parts are readily available, as are shorter lug tracks. It's more than possible to give these dusty old "Barn Cats" a new lease on life. 🐾

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# Need a sponsor?

## HERE'S WHAT THEY ARE LOOKING FOR FROM YOU!

BY ROSS HALVORSON

**I**t's no secret that sponsorships are a key component to any successful race program. Landing sponsors, however, can be just as competitive, if not more than the actual races on the track. In today's environment of shrinking budgets,

social media and instant access to information, the sponsorship arena is more difficult, more exciting, more opportunistic and more non-traditional than ever to navigate.

There are no shortcuts when

it comes to sponsorships, and long-time racers (especially independents) know that you should be prepared to foot your own racing bill for a long time. However, there are a few "performance mods," so to

speak, that may help get your sponsorship application noticed more than others.

That's why *AmSnow* went to the decision makers from several sides of the industry and asked them what they want to see from racers seeking sponsorships. This is one of very few places you'll find exclusive answers to what every racer wants to know: **"What do I need to do to get a sponsorship?"** Here are some tips from the industry insiders!



Joe Wiegele photo

## Build your own brand

### "SPONSORS ARE LOOKING

for a complete package, so how you present yourself off the track is equally as important as results. Positive personality, attending shows, being proactive to promote successes, working with media and an active social media are all extremely important. Start building a brand for yourself by introducing and following up with industry people and companies, and leverage whatever makes you unique. This could be anything from moves on the machine (i.e., the Burandt Hopover move), to unique color schemes, to fun videos (see Levi LaVallee's Facebook work). But you also have to be meticulous in the little things, like making sure to completely fill out sponsorship applications and include professional photos. iPhone photos rarely cut it when you're competing against hundreds of other applicants." – Stephen Clark, 509



Ryan Thompson -RLT Photos

**DAN THE MAN** One industry guy who has done a great job of building a brand around himself is rider Dan Adams. Stay positive, work hard, and continuously market yourself and your passion.



## Work the local angle

**"PRIMARILY, I LOOK** for a racer who is dedicated to promoting his sponsors through awareness in the industry, including social media outlets and local businesses in their area. When they promote on a local scale, we can generally capitalize on that region with our products. For example, we started working with a racer locally a few years back who had ties with D&D Racing. Once they saw what he was using for skis on his sled while being consistent and competitive, we started

working together and they now carry our products directly. Each and every customer that walks through the door at D&D is offered Curve skis. It all started on a small scale with one competitor. This individual helped our business and would always give us good feedback on performance, and constantly kept us in the loop. Companies want to see investment in racers pay off. Communication and dedication are No. 1 in my book."  
– Nick Pryputniewicz,  
Curve Industries



Photo by JJ's Outlaw Photography

**"What do I need to do to get a sponsorship?"**

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## Make sure you're a good fit

**"WINNING ISN'T NECESSARILY** of most importance anymore. It's great, and we love it when our racers come out on top, but more importantly, in a lot of cases, we're more interested in your sphere of influence. I want to know what puts you in a position of influence to recommend my products. Things like social media presence are very important. We're going to look at that throughout the application process and make sure the things you're about are a good fit for someone who represents my company. On top of that, we're interested in what equipment you're running. Part of our sponsorship may include product, so we want to make sure what you're running is a good match for our products, so we can both be as successful as possible come race day." – *Jason Houle, Straightline Performance*



## Have a plan of attack

**"WE LOVE WORKING** with grassroots/weekend warrior racers. They're the backbone of the racing industry! Our goal is to make racing more affordable for them and to make them look awesome!

be competing. If they have raced before, it is imperative to get some good action shots and possibly a video highlight of performances over the past several years, and how many races they hit each season. It just paints a picture of how dedicated they are to promoting themselves." – *Jess Farr, Castle X*



The first thing we focus on is their resume. Even for first-time racers, it's important to have a resume explain what their goals are for the season. It tells us they have a plan and they're passionate about accomplishing their goals. It doesn't have to be a long, drawn out thing. All we need is a list of the circuit(s) they'll be running and the class they'll

## Keep it clean

**"PERSONAL CONDUCT AND** how you are away from the track is almost as important as performance on the track. We take a look at everything from wins, to a potential racer's family, to school and grades. Racing is only part of the big picture. The more you understand that, the more interested we usually are. Photos and resumes are important in the application process. Show us you're a professional when representing our products. Your appearance and attitude at events away from the track is just as important as when you're at the track. Those events are where you really have a chance to interact with potential customers, and the way you handle those situations really matters. Even little things like taking care of your equipment really matter. No one wants their products displayed on a sled covered with mud from last week's race. Keep it clean!" – *Carey Daku, FOX*

## Practice, practice, practice

**"EARNING A SPONSORSHIP** is twofold: one part on the track, the other part marketing. Both are equally important.

Our Race Manager, Mike Kloety, looks for a racer that is the right age for the class they are competing in. He looks at how long they have been racing and makes sure they have competed in plenty of quality events. Racing once at the county fairgrounds won't get you Tucker Hibbert-status sponsorship!

Other things marketing looks for, that really appeals to any sponsor, is how a racer portrays themselves on/off the track. Sometimes having a racer with a personality that is well-spoken on camera, interacts with the fans or can interact on the podium goes further than winning races.

Promoting the brand that sponsors you is also key. Again, this goes beyond wrenching, physical fitness and taking a checkered flag. Always ask yourself, 'Have I done everything in my power to promote the brands that are sponsoring me?'

Take a long look at someone like Tucker Hibbert. Aside from winning, Tucker sets the bar in the #68 Team Presentation (the look and feel of their trailer, snowmobiles, clothing), promoting sponsors (he's at events, social media, etc.), talking



intelligently in interviews. Instead of rambling off a list of sponsors, Tucker talks about his race and mixes in his sponsors on the podium or in media interviews. (HINT: PRACTICE THIS!)

It's also important to know you don't need a 53-foot trailer to be a successful racer. You can still put together an entire 'personal' package like what we described above, racing out of the back of your truck." – *Kale Wainer, Arctic Cat*



Joe Wiegele photo



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**LOOKS THAT KILL!** If the performance of this big Mach Z custom-built dragster wasn't enough, the new rear suspension will have folks talking on the starting line!

## Wild Mach Z ice racer!

TRICKED FOX SUSPENSION GOES FROM  
TRAIL TO RACE TRACK IN SECONDS

BY MARK BONCHER, WITH CLIFF RANDALL

**“W**ow, what a week of building and tuning on the FOX Mach Z 1000 Project!” Cliff told me over the phone. In his extremely excited Canadian accent, Cliff let me know that he had made the deadline to get his newest piece of racing tech put on his bad boy Mach Z and photos of it to me for this

January issue race section. Cliff's Mach Zed has been featured on AmSnow.com and other places before. But Cliff recently worked with FOX to make a cool new suspension update that we think everyone will enjoy hearing about.

“Don't worry buddy, we got her done for you, and you're gonna like it!” Cliff sold me!

### Next-Level FOX Adjustability

The photos Cliff attached to an earlier email showed a hot

new (totally adjustable) FOX “air” ice racing suspension. Now, I know what you are thinking. FOX's air shocks and the suspensions they were in were already adjustable! That's true, but in all the other suspension applications, you could not change the angle of attack or amount of travel in a suspension with standard off-the-shelf FOX air shocks. Cliff says this new suspension, “Is truly a gift from heaven!”

This particular Mach Z is pretty much a drag race sled,

but it's still used for trail riding. We know Cliff, though, and this is probably a straight-line drag race sled 80% of the time versus a trail sled. That said, with the new FOX suspension, Cliff no longer needs to pull out and modify the skid, or change shocks to get the angle of attack correct for top speed drag races on ice. It's now done via a set of remote FOX air valves mounted to the skid. These custom-built FOX air shocks were provided by H2R Distributing Inc. in

Abbotsford, B.C., [www.h2rfoxshox.ca](http://www.h2rfoxshox.ca).

These are different from your standard FOX air shocks. They are shorter than those on a stock sled, and H2R Distributing did the internal modifications. In the photos, you can see near the aluminum plate and valves at the back of the skid that this suspension was prepared by Rob at Tricked Toys, and the plate holds the air valves. He did some amazing work completely modifying this suspension. (Note the special arm and bolt design that Rob built to keep the shock “adjustability” compressed – ingenious stuff!) The arm runs from the front of the rear shock in the skid to the back, and it's hooked into the skid frame. When you turn the bolt, you can raise or lower the





1



2



3



4

**HOW IT WORKS** (1) The custom rear skid has FOX shocks and special mods that allow it to quickly compress for drag racing. (2) The angle of attack is what is important for ice drags. (3) The sled can easily go back to being "sprung." (4) A new 9902R Camso shaved track was used.

fixed height of the skid.

The important modifications were longer air lines and the fabrication work. Basically, with this setup, you can ride the trails to your local ice drag racing area, and in seconds, totally compress the skid by adding air, snugging up travel, and changing the way the track contacts the ice so that you can be MUCH faster in an ice drag race. This means the world to weekend warrior racers and folks who love to trail ride, but still want to be competitive when friends want to race.

Also, check out the brand new Camso (formerly Camoplast) 9902R ice drag track. This one is shaved down from stock for less drag at high speeds. Basically, this sled is running on stud/chisel tips at top speed with an approximately 12-degree angle of attack. This means that only the back 18 inches of the track actually touch the ice ... what you want for fast drag racing. The track is also kept as tight as possible to avoid any excess "ballooning" while running on "beautifully prepared (pool table smooth)

NBSSR ¼-mile tracks up in Ontario." (No worries, Cliff. We got your plug in the article!)

This Mach Z has reached speeds in excess of 140mph at the NBSSR, but it is only raced at closed-course race venues.

### For you?

These shocks ain't cheap, and the setup will probably run even more than the shocks. Since this was a demo and trial basis, the exact cost will vary, but suffice it to say that several thousand dollars is not out of the question. Cliff

told me it was like handling gold! If you are looking for a similar setup from Tricked Toys ([www.tricked-toys.com](http://www.tricked-toys.com)), you will be one of very few people with this type of setup.

Since this is a more race-oriented machine, AmSnow has Cliff and his folks working on a tamed down version for application on a truly stock trail sled – a fabulous Ski-Doo 800 E-TEC (120mph in a ¼-mile on ice at the NBSSR). We are even MORE excited to show that build to the AmSnow masses, so stay tuned! 🐾



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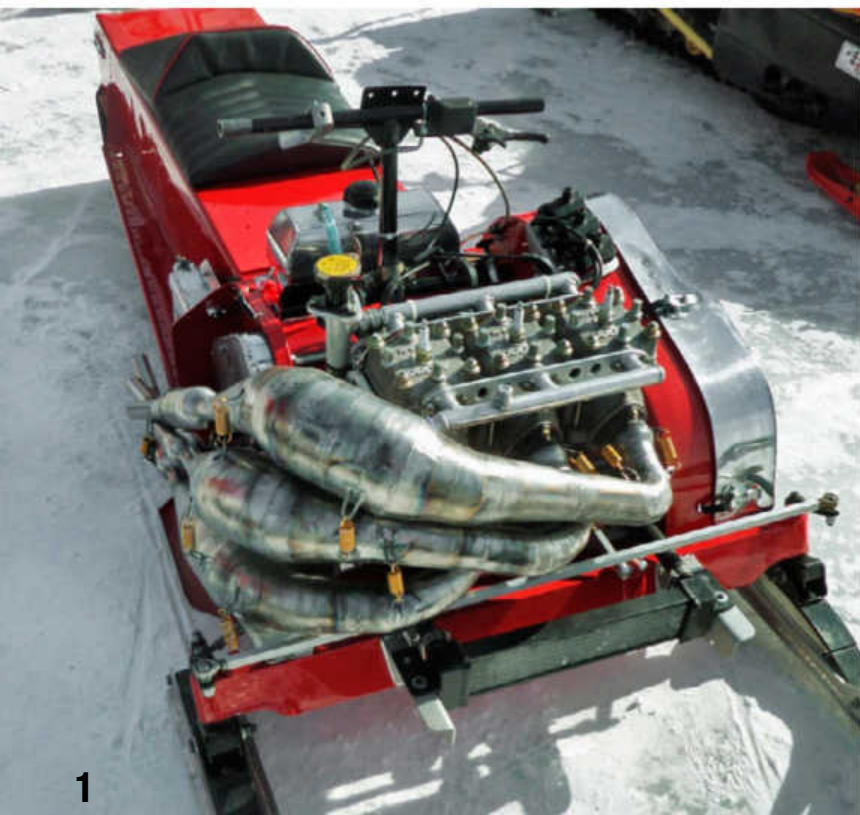
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# Ice drag action is hot again

THE 'TECH,' AND WHY THIS TRADITION IS GETTING NEW BLOOD

» **Everyone likes watching Outlaw sleds hit 150 mph** in 4.6 seconds. That ¼-mile is always impressive to see in person! That is exactly what you'll get if you check out the 2016 ISR World Series of Ice Drags in Oconto Falls, Wis., this February. Ice drag racing is coming back to life, thanks to a lot of dedicated racers, directors and the Oconto Falls Sno-Jokers Snowmobile Club.

## ■ Bringing the World Series back

The Sno-Jokers finally decided to bring the ISR World Series of snowmobile drag racing back to Oconto Falls after a number of years of simmering interest. The ISR World Series of Drag Racing was first run in 1981, and it eventually

grew in popularity until the 1990s, when it became the world's largest snowmobile race with over 750 entries. The prestigious "Woody's Challenge" was the World Championship class, contested with 800cc open mod sleds. Double elimination brought

the entries down to the top 16, who then ran two at a time in NHRA-style elimination. With a \$5,000 first prize, the competition and machinery was top class.

Unfortunately, in the mid-1990s the manufacturers decided to put all of their

money into snocross racing, and pulled all support from oval, enduro, asphalt drag, ice drag, cross country and other racing.

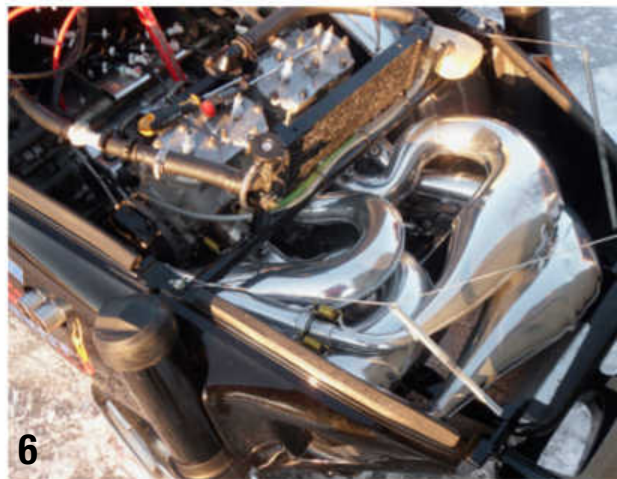
The racing community was left to struggle for survival, and many circuits ran into severe problems. Ice drag racing and the ISR World Series were left out to dry. Eventually, the number of entries became fewer and fewer, and it finally ceased to be for several years.

Then, five years ago, Tim and Bart Magnin, together with their experienced track crew from Sno-Jokers, decided to revive the "Series." Tim and Bart are long-time drag racers with many ISR Series wins to their credit, but the family interest goes back to their father, Chub Magnin. He was



**150+ MPH ON ICE!** Outlaw sleds like this one regularly hit speeds greater than 150mph in Oconto Falls, Wis.





**A GREAT WAY TO WATCH FAST SLEDS!** (1) Tim Magnin's 1987 Top Fuel Championship sled is being restored to Race in the Vintage Class at The World Series in Oconto Falls, Wis. (2) Inside the warmup tent, there is food and even live music on Friday night. (3) Every race is timed, and slips are posted on the schedule board for all the racers. (4) Only the biggest sleds go two at a time down the track; here, four Pro Stock racers blast off the line for the excited crowd. (5) You want high tech? This is what it looks like under the seat of a turbocharged Outlaw sled equipped with nitrous oxide. (6) Yamaha Vmax-4s are still popular with drag racers.

the originator of the popular drag races on the Oconto River. Chub built an organization that also ran other races at Shute Pond and Marinette. Eventually, the Oconto group was awarded several ISR World Series events, and they pulled off some great professional shows.

### ■ The place

The Oconto River is the ideal location for a race track because it is wide and lies in a natural river valley that holds cold air long after snow melts on the surrounding farmlands. Organizers plow a wide track with lots of safe shut-down area. Access is through a park that controls the traffic flow. Along the track is a nice spectator area with grandstands. There's also a large

warm-up tent where the club serves food, entertains the crowd with a band on Friday, and holds a trophy presentation after Saturday's races.

The event always draws a large crowd of families, as well as many high school-age kids who enjoy the party atmosphere

and the exciting racing action. In order for snowmobiling to proceed healthily into the future, it's very important to have such events that are accessible and fun for young people.

With the record-setting Outlaw dragsters pumping out

up to 650 HP, top speeds hit 150 mph and 4.5-second E.T.'s on the 660-foot (¼-mile) drag strip. The excitement is there for everyone!

The high-power sled runs are done with just two sleds at a time for safety reasons, while stockers, improved stock, and mods run four wide. There are also classes for older vintage sleds, and their popularity is growing as many '80s and '90s sleds are being brought out of garages and put back into action.

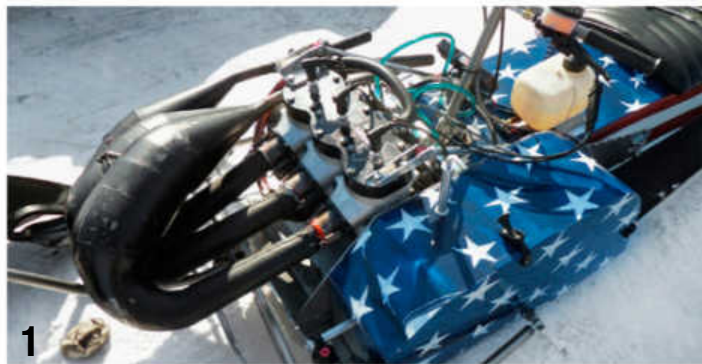
The only update needed for an older sled to compete is installation of an all-rubber track for safety reasons. The old cleated tracks would often spit out the cleats, and several accidents with bad personal injuries eventually led to them being banned. When drivers



**KEEPING THEM HONEST** The ISR tech crew keeps competitors from trying to gain an unfair advantage in their respective classes.







**TRIPLE THE FUN!** (1) Lenny Benoit's 1000cc Price triple cylinder sled is looking good in a new Patriot paint job. (2) Lenny uses his own exotic and trick twin barrel carburetors for maximum airflow. (3) Jeff Ratzlaff's 1400cc Arctic Cat 4-cylinder engine pumps out the power.

switched to the all-rubber tracks, they also saw an increase in top speed, once they learned how to stud the tracks correctly.

Walking through the pits is a feast for the eyes of enthusiastic gearheads of all ages. Masterpieces like Bill Reynolds' 4-cylinder Polaris Indy, Lenny Benoit's 1000cc triple Price motor with his own double barrel carbs, Jeff Ratzlaff's 4-cylinder Arctic Cat, plus immaculate restored vintage sleds, a gaggle of Vmax-4 racers and very quick Rotax twin sleds. If you like really radical iron, check out the turbocharged Yamahas with additional nitrous injection for the Outlaw class.

## ■ When to be there

The racing starts on Friday with tech inspection and practice. Races are run into the evening under stadium

lighting. Racing resumes early Saturday and runs to the finish of classes in the afternoon. The trophy presentation takes place in the tent, with generous payback from entry fees and class sponsors. Many of the top racers go home with several thousand dollars in their pockets.

The Outlaw classes have separate shootouts, but for the mod sleds, the most prestigious prize is perhaps the "Chub Magnin Memorial Cup." This is a large cup awarded to the winner in the Heavy Mod 800 class and presented by Marie Magnin, the popular family matriarch. The event culminates in the evening with a fireworks show on the ice.

If you like extreme action on ice, or want to participate yourself, check out the agenda for February 2016 at [www.sno-jokers.com](http://www.sno-jokers.com).

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and get ready to ride more this winter!

But hurry — you must enter by December 31, 2015! See official rules on page 53.

## Got good gas?

**Q** I purchased a five-gallon can of VP C14 Plus last weekend. After I got the can home, I noticed it had a date of 2011 stamped on the can. It is a sealed unopened can. Will this gas be fine to run or should I contact the seller and see if I can get a fresher can? – *Riley*

**A** I would be terrified to use fuel that old in a well-tuned race engine, even if it's in a sealed pail. You must return it and ask for a more recently filled pail (there should be a date on the bottom).

VP's chief chemist, Duane Minazzi, explained to me that the fuel's "front ends" (i.e., the easiest-to-vaporize components, like butane and isopentane) can escape out of the flexible plastic spouts on sealed pails, causing a reduction in volatility (indicated by lower-than-spec Reid Vapor Pressure). The "front ends" are vital. They're the first to transition from non-flammable liquid/globules to flammable vapor in the intake



tract. One study indicates that by the time the fuel reaches the combustion chambers, 80% of the front ends are vaporized, but only 20% of the heavier ends of the fuel are ready to burn! So you can see, when the front ends are lost, you can have an extremely lean, HP-robbing, piston-sticking net mixture in the combustion chambers, even with safe-looking EGT's (the unburned globs cooling off the probes), and dandy wideband A/F readings (the globs finally vaporize in the heat of the exhaust systems, and finally burn there too late, fooling the A/F gauge). Watch those piston domes!

It's quite practical to do your own fuel



testing. RVP is a sure indicator of present or lost front ends. I have several informative YouTube videos showing RVP testing on my DYNOTECH Research channel. You can also check out the DTR blog ([www.dynotechresearch.com/blog](http://www.dynotechresearch.com/blog)) that explains how you can create a Home [Reid] Vapor test unit for \$30 that works nearly as well as systems that cost thousands. Video at [www.youtube.com/watch?v=8XDRure4zJ8](http://www.youtube.com/watch?v=8XDRure4zJ8)

Never assume that any pail, even one filled yesterday, is fresh. It may have been trans-filled from nine-month-old bulk or an old opened drum, then sealed. RVP testing is cheap and easy, and if you get substandard stuff, then you should complain loudly! – *Jim Czekala, DynoTech*

**Q**  
+  
**A**  
SOLVING  
YOUR  
PROBLEMS  
SINCE  
1986

## Stud clarification

**Q** Back in 2010, *American Snowmobiler* studded a 2009 600 Dragon with one-inch studs. Was that a misprint? That sled came with a 1.25-inch track.

– *polariscometSamagalski, Libau, Manitoba*

**A** We assume you're referring to our Nov. 2009 issue (pg. 20)? Here we stated that we put 1.075-inch Snow Studs on a 2009 Polaris Dragon 800 SP (not the 600) which did come with a 1.25-inch lugged RipSaw track. But yes, we indeed had a typo of our own six seasons ago. It should have read that we stud-



**PERFORMANCE OR SAFETY?** Makers of traction products often have multiple stud patterns available depending on the desired sled use.

ded it with the Snow Studs-recommended 1.325-inch studs. Snow Studs was our traction sponsor that year and has stud recommendations dating back to

1996 on their website, [www.snowstuds.com](http://www.snowstuds.com). Sorry for any confusion. Thanks for the blast from the past, and for keeping us honest! – *Experts*



## Q Belt Break In

Your Nov. 2015 tips on changing a snowmobile drive belt stated that after changing the belt you should drive your butt off to catch your buddies. I was at the Toronto International Snowmobile show on the weekend and stopped at the Dayco booth to inquire about a proper break-in distance. I thought the answer would be to drive gingerly for a couple miles. They recommend different maximum speeds until fully broken-in at 50 miles/80kms. (It's possible they said 80miles). I don't find the actual numbers on their website, but they were on the sleeve for new belts. – *Norman Schwegel, Kitchener, Ontario*



**A** Thanks for reading *American Snowmobiler*! We were having a little “tongue-in-cheek” fun in the article when we said that you should ‘ride fast to catch up with your buddies.’ We don’t often ride “gingerly,” and our own testing over several decades has led us to believe that varying your RPMs, speed, acceleration and braking is the best way to get a belt broken in. Each manufacturer has their own set of “break-in” instructions that include maximum operating speeds, distance, etc. For example, Bill Hay of Dayco Canada states, “For maximum drive belt life, do not exceed 80 km/h (50 mph) during the first 30 kilometers (20 miles) of use. Exceeding 80 km/h (50 mph) during the break-in period will greatly shorten the life of this product. Washing a belt with soapy water (as many people suggest) also only applies to specific belt manufacturers (not

Dayco). We don’t use a silicon on the outside of the belt in the manufacturing process. The idea of the soapy water is to remove this silicone so as to promote better gripping of belt by clutch.” – *Experts*

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## Reader Responses: Weak Spark

**Q** I fired up my pro stocker yesterday, and it ran barely 20 seconds, quit and lost spark somehow. I checked grounds, cleaned all plug-ins and still have spark that’s weak every once in a while. My batteries are fully charged. The red LED light comes on when I pull it over, but there’s not enough spark to start it. I hope the MSD isn’t fried!

– *lastminute1200*

**A** Pull the plug apart going to the triggers. You can use a jumper wire going back to the box to test for spark. – *bman*



## Amsnow race sled history

We’ve ridden many of the OEMs’ consumer wannabe race sleds over the last few years. Now, we know there are still differences between ours and real true race sleds. But what we consider consumer ‘race replicas’ are still pretty good race sleds and close to what is being run in some stock classes! Here’s how a few consumer versions stacked up:

### CHART TITLE

SLED	WET WEIGHT (LBS.)	REAL WORLD TOP SPEED (MPH)
2015 Arctic Cat ZR 6000 RR588	588 (w/studs)	82.82
2014 Ski-Doo MXZ X-RS 800	569 (w/studs)	99.37
2014 Yamaha SR Viper (yes, it has been in race circuits)	607 (w/studs)	87.06
2012 Ski-Doo X-RS 800	558 (w/studs)	92.93
2009 Yamaha Nytro RTX SE	612 (w/studs)	93.97
2008 Polaris IQ 600 RR	551	90.34



## Checking compression ratio

**Q** How do I check comp ratio on a 700 Doo triple? I know you add oil to the cylinder, but what formula do you use after you fill it?

– mach69x

**A** Checking compression ratio on the 700 Ski-Doo triple would be the same as most 2-stroke engines:

- Put the piston that you are going to check at “true” top dead center.
- Be sure to seal around the edge to avoid any fluid leaking past the ring.
- Install the head and bolt it down.
- Fill with your test liquid to the bottom of the spark plug with a burette. This will give you the installed cc’s.
- Next, you must know your bore and stroke. There are two ways to calculate the compression ratio: standard (takes into account the entire stroke) and corrected (accounts for when the exhaust port is completely closed).

Here’s an example of an 800 Ski-Doo that measures 25.5cc installed. This will give you 16.7:1 standard compression ratio, and 8.4:1 corrected compression ratio.

– Jason Houle, Straightline Performance



**Chart 1**

	VALUE	UNITS
BORE (B) =	8.2	cm
STROKE (S) =	7.57	cm
CORRECTED STROKE (S1) =	3.57	cm
MEASURED V2 =	25.5	cc

**Chart 2**

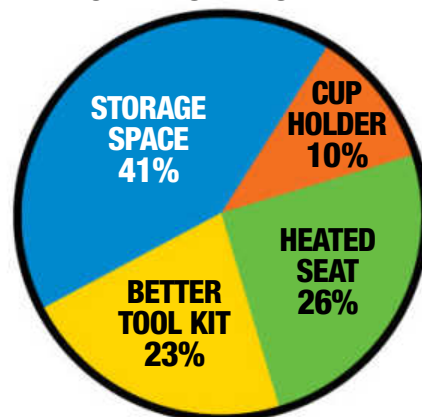
Standard Compression Ratio (S.C.R.)=	$(V1 + V2) / V2$
V1 (Volume of a cylinder) =	$(B^2 \times S \times \pi) / 4$
V2 (Minimum Combustion Chamber Volume)	From Chart 1
S.C.R.	16.7:1

**Chart 3**

Corrected Compression Ratio (C.C.R.)=	$(V3 + V2) / V2$
V2 (Minimum Combustion Chamber Volume)	From Chart 1
V3 (Volume of a cylinder with piston just closing the exhaust port)	$(B^2 \times S1 \times \pi) / 4$
C.C.R.	8.4:1

## You said it!

THE ONLY THING MISSING ON MY SLED IS...?



## THE BARGAIN LOT



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**WHAT WE DIDN'T:** Cold if you don't add larger windshield, typical first-year production woes (see recalls).

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**Rear Susp.:** SC-5 (137-in.) w/ HPG T-A alum. center shock, C-36 racing clicker rear shock

**Top Speed:** 98.63 mph\*

**1/4-mile:** 12.79 seconds\*

**Avg. MPG:** 13.3\*

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\*AmSnow Real World tested

\*\*Assumes stock sled in excellent condition

## If you ask it, they will answer!

Each month, we take a sampling of questions from our "Ask the Experts" forum on **AmSnow.com** to showcase in the magazine. Our online forums allow users to ask questions and get them answered by some of the top minds in the industry, from ourselves and companies like Straightline Performance, Dyna-Tek Racing, Starting Line Products and more! All you need to do is log on to **AmSnow.com** and register your user name. Go ahead; it's **FREE!**

### Q How much timing?

How much timing should you give for a pro stock 700 for grass drags?  
- mach69x

**A** Ignition timing will vary depending on compression ratio, gas used, and distance running. A good starting point for grass drags will be around 15 degrees.  
- Jason Houle, Straightline Performance

### Q ISR Pro Stock drag rule

When I read the 2015-16 ISR rules, they state a chaincase must be used. It

## Did you know...

**There's oil in them there shocks!** And just like the oil used by your car or 4-stroke sled engine, your shock oil should be changed. We detailed servicing your FOX shocks in an earlier issue of *AmSnow* (Nov. 2015, p. 48), but all makes of snowmobile shocks should be freshened up annually. Just like engine oils, the oil you use in your shocks really matters too! It's important to consult with the manufacturer of your shocks to make sure you're using the proper type of oil for a shock rebuild. The oil each company uses has specific performance characteristics designed to work with all the moving parts and components of their shocks. So do yourself and your sled a favor, and take the time to learn what oil should be used for your shocks! It may cost a few more dollars for the right oil, but you'll be rewarded with better performance and longer shock life.



doesn't matter if it is rolled forward, backwards, up or down as long as the jackshaft remains on top of the tunnel. Can someone please verify that I am understanding this wording correctly?  
- catman289

**A** ISR Pro Stock Drive Rule 3,C states, "Crankshaft to jackshaft center to center is allowed +/- 1" (one inch) tolerance from OEM specification for the model." (2015-16 ISR Rule Book, pg. 21) Hopefully this helps! - Experts

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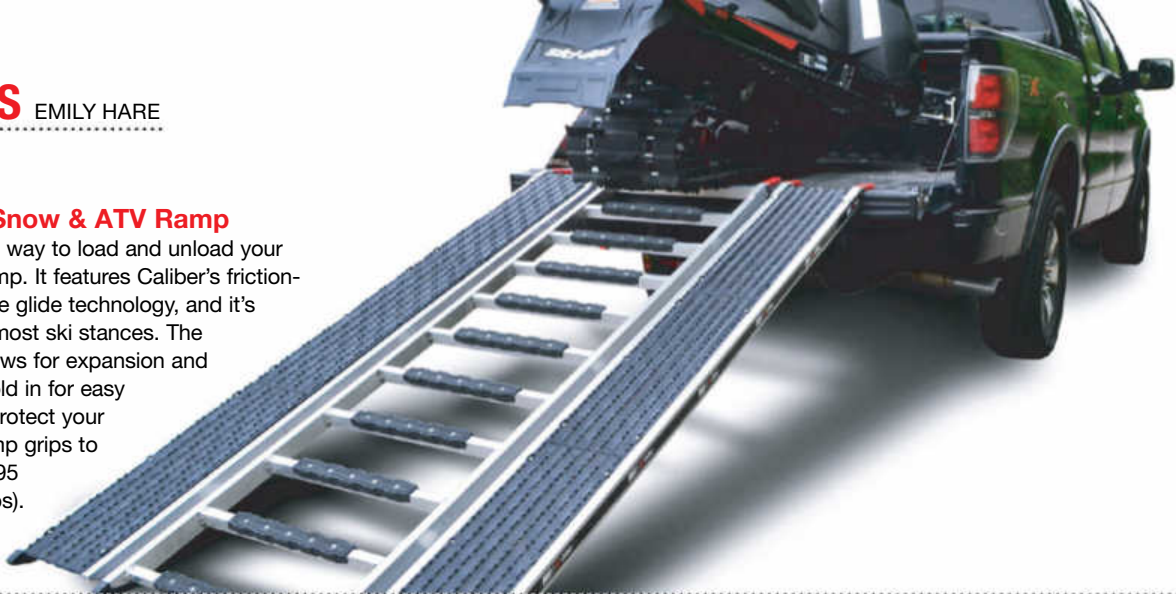
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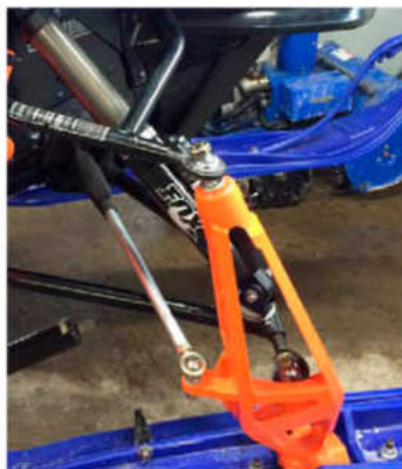
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**More info:** [www.caliberproductsinc.com](http://www.caliberproductsinc.com)



### Elka Stage 5 Shocks AVAILABLE FOR MOST

Arctic Cat sleds with ProCross or ProClimb chassis, these ultra-light aluminum shocks feature both low-speed and high-speed compression adjustability, plus rebound adjustability. The high-volume piggyback design provides fade-free performance in all conditions. Lightweight coil-over springs complement low-friction O-rings and seals for smooth, supple performance over a variety of terrain and at ultra-low temperatures. Cost: \$1,899 per pair of ski shocks, \$829 for each track shock. **More info:** [www.store.arcticcat.com](http://www.store.arcticcat.com)



### Yamaha SR Viper/Arctic Cat ProClimb 365 Kit

**IMPROVE THE HANDLING** of your Yamaha Viper or Cat ProClimb (2012-2015) with A-arms from Barcode Performance. Built from aircraft-quality cromoly tube, the kit has a 36-inch-wide stance with a +5-inch forward design and pre-installed oilite bushings. An included steering mod increases turning by more than 10 degrees, so it's much easier to turn around in a tight spot. The kit uses factory tie-rods and all stock shocks, including those from 38-inch and 40-inch stance sleds. Kits for Ski-Doo XMs and Yamaha Nytros also available. Cost: \$989. **More info:** [www.barcodeperformance.com](http://www.barcodeperformance.com)



### Rox Flex-Tec Mount Kit

**IF YOUR SLED** has Hayes brakes, you may have had past difficulty installing Rox handguards on it. Well no longer. Rox now makes a Flex-Tec handguard mount that's designed to fit around a Hayes brake reservoir. Made of machined billet 6061-T6 aluminum, the mount completely clears the brake lever and allows the e-brake lock to fully engage. Cost: \$84.95 a pair. **More info:** [www.roxspeedfx.com](http://www.roxspeedfx.com)



### C&A Pro Ski Handles

**THESE HIGH COMPRESSION-MOLDED** ski handles are not new, but C&A Pro now offers them in Sunburst Yellow and Lime Green to match current-model Ski-Doos. Made of ultra-high molecular weight polyethylene material (UHMW-PE), they are race legal and highly durable. Their universal design fits all of the skis in C&A Pro's current lineup. Hardware is included. Cost: \$55.95 per pair (\$62.95 for Sunburst Yellow or Lime Green). **More info:** [www.caproskis.net](http://www.caproskis.net)



### BCA FLOAT MTNPRO Airbag Vest

**AVALANCHE SAFETY SHOULD** be important for any mountain rider. Protection against impact plus safety has never been better than with this vest. Lightweight and comfortable, the vest contains a trigger-activated, single-chamber 150-liter airbag that expands instantly out of the pack to keep you at or near the avalanche surface. Refillable, reusable and it has adjustable sides and waist. Zippered front pocket fits a beacon. Cost: \$974.95. **More info:** [www.store.arcticcat.com](http://www.store.arcticcat.com)



### Yamaha Racing Button-Down Pit Shirt

**NO NEED TO CHOOSE** between style and function when making adjustments to your race sled. This polyester/cotton blend shirt sports embroidered Yamaha Racing logo and graphics on the chest and collar, and GYTR and Yamalube logos on the sleeves. Polyester side mesh panels are a welcome feature when you're feeling the heat of competition. Men's sizes S-4XL, women's sizes XS-3XL. Cost: \$69.95. **More info:** [www.shopyamaha.com](http://www.shopyamaha.com)



### Ski-Doo Sport Performance Flared Windshield – High

**ALL OF SKI-DOO'S REV-XS** accessories now work with 2016 models that have the 1200 4-TEC engine, including this one-piece windshield with integrated deflectors (also works with REV-XM models). Its 16-inch length is great for redirecting snow in deep-powder conditions. Depending on your vehicle configuration, you may need a corresponding base kit to install this windshield, so check with your local dealer before you buy. Cost: \$129.99. **More info:** [www.store.ski-doo.com](http://www.store.ski-doo.com)

### 509 Carbon Altitude Helmet

**INCREDIBLY LIGHT MEETS** incredibly strong and stylish in the latest helmet offering from 509. A proven carbon fiber shell design combines with a dual density interlocking EPS foam removable liner to meet DOT and ECE 2205 safety standards. The Carbon Altitude also features the industry's first use of the innovative Fidlock HOOK magnetic buckle system, allowing for single hand operation. The Altitude sports eight intake/exhaust vent ports to keep you cool and dry. Sizes XS-2XL. Cost: \$399.95. **More info:** [www.ride509.com](http://www.ride509.com)



### Arctiva Mechanized Boots

**KEEP YOUR FEET WARM** and dry in temps as low as -40 F with these boots that boast a removable, moisture-wicking liner with 3M Thinsulate. Donning and removing the boots is easy with the new ratcheting buckle and straps. A full-length internal EVA midsole provides extra support for all-day comfort. Available in black or black/grey, sizes 6-13. Cost: \$200. **More info:** [www.arctiva.com](http://www.arctiva.com)



### Olympia SB5500 Solar Charger

**KEEP IT CHARGED!** Olympia's Solar Battery SB5500 allows you to harness the power of the sun to keep your devices charged while you enjoy the great outdoors. No sun? No problem. This charger is flexible; it can be plugged in to charge a power bank that stores energy for those sunless times. Cell phones, tablets, flashlights, two-way radios or anything with a USB or micro-USB port will now be able to keep up with you. Two output ports let you charge multiple devices simultaneously. Cost: \$59.99. **More info:** [www.olympiaoutdoors.com](http://www.olympiaoutdoors.com)



### KLIM Radius Goggles

**ACCORDING TO KLIM**, these goggles offer the widest field of view in the industry. Built to perform in the harshest riding conditions, they're equipped with anti-fog technology and two exclusive foam structures to provide maximum breathability, durability and comfort. Choose your frame design ("Tenacious" or "Shattered"); each frame is available in three lens color options. Cleaning cloth included. Cost: \$69.99 (\$89.99 for smoke lens). **More info:** [www.klim.com](http://www.klim.com)



## ■ HOT PRODUCTS



### Judged Defendant Gloves

**FOR AGGRESSIVE RIDERS** looking for maximum movement and warmth, these lightweight gloves are the way to go. Recent design improvements included added grip and an extended cuff. Rated to -20 F, they feature leather palms, two Velcro straps, and Thinsulate, Kevlar and Hipora technology. As far as all-around gloves go, the Defendant is most popular among Judged consumers. Sizes S-XXL. Cost: \$74.95. **More info:** [www.judgedgear.com](http://www.judgedgear.com)



### Quick-Glo

**ORIGINALLY INVENTED** in 1957 as a rust remover/metal polish, this environmentally-friendly cleaner removes heavy oxidation from most hard surfaces, including chrome, brass, stainless steel and glass. Using pumice instead of sand, the water-based solution protects surfaces from future oxidation damage for up to one year. Clean, polish and wax your sled with a single application. Cost: \$14.99 (Original or Fine), \$19.99 (P-3 Ultra). **More info:** [www.quick-glo.com](http://www.quick-glo.com)



### ThermaCELL Heat Packs

**UNLIKE DISPOSABLE, AIR-ACTIVATED** hand warmers, these packs provide constant, regulated warmth. The backside of each pack is lined with a phase-changing material, a soft and durable fabric that evenly distributes heat. Simply touch a button to select one of three temperature settings, then drop a pack into your glove or pocket to enjoy up to six hours of comfort. The internal LiPo battery charges in four hours or less and lasts up to 500 charging cycles. Cost: \$69.99 (one pocket warmer) or \$79.99 (two hand warmers). **More info:** [heat.thermacell.com](http://heat.thermacell.com)



### Alpha Jacket and Bibs

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most versatile jacket-and-bib combo, the Alpha is built for the most rugged riding conditions. It features Kevlar-reinforced Schoeller panels in areas that see the most wear. The slim fit of the garment is not too baggy, but it still provides ample room to comfortably move around. The eVent Technology gives the rider complete control over climate. In the bibs, custom-formed knee pads offer extra protection and comfort. Sizes M-2XL. Cost: \$589.99 each. **More info:** [www.motorfist.com](http://www.motorfist.com)



### PRO Max 950 Big Bore Kit

**THIS TOP END KIT** is for 2010-2016 Arctic Cats with 800 H.O. motors, but it will also fit on the 800s from model years 2007-2009. It includes 92.6mm PRO Max cylinders, piston kits, billet head cover, billet domes, exhaust valves, and a top end gasket kit. Dyno tests by Black Diamond have produced more than 210 hp and 130+ ft.-lbs. of torque. No exchange is needed; just bolt on the kit and let 'er rip! Cost: \$1,995. **More info:** [www.speedshopinc.com](http://www.speedshopinc.com)



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**INCREASE YOUR SLIDER** longevity by replacing the 129.37mm wheels on your 2006-2016 Yamaha Apex, Vector, Venture, FX Nytro or Phazer with this 135.8mm idler wheel. This top seller from Excell Motorsports is solid with no holes, which helps to prevent it from freezing in place. A direct bolt-on replacement that can be mounted inside or outside the rail, the "X" wheel comes with the replaceable 6005 NTN bearing. Cost: \$29.95 each. **More info:** [www.excellmotorsports.com](http://www.excellmotorsports.com)



**Stanley Satellite**  
**FOR THOSE TIMES** when your buddy needs to change a belt on the side of the trail after dark, he'll appreciate having this rechargeable LED work light in his tunnel bag. Use it as a conventional flashlight, or unfold the three light panels for wide-range viewing. There's also a 1-amp USB power supply port for charging your other electronic devices. A stow-away hook and a magnetic base facilitate total hands-free placement. Cost: \$59.99. **More info:** [www.stanley12volt.com](http://www.stanley12volt.com)



**SNX Pro 2016 Riding Jacket**  
**RACERS OF ALL AGES** will look sharp at the snocross track, on the trail or in the mountains when they wear this jacket from FLY Racing. Available in orange/black or black/hi-vis (shown), the jacket has a removable thermal liner, and updated intake and exhaust vents for better breathability. The fully waterproof membrane offers protection from the elements in an abrasion-resistant poly-shell construction. Cost: \$219.95 (adult sizes XS-2XL), \$179.95 (youth sizes YS-YL). **More info:** [www.flyracing.com](http://www.flyracing.com)



**AXYS X2 Seat & Backrest**  
**NOT READY TO COMMIT** to a 2-up sled for the occasional family ride? Try adding an X2 passenger seat and backrest to the back of a new Switchback instead! Both add-ons install easily and quickly thanks to Lock & Ride technology, and side handholds on the backrest allow for a more comfortable ride for your passenger. Cost: \$459.99 (seat), \$499.99 (backrest). **More info:** [www.polaris.com](http://www.polaris.com)

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# Make it ICELAND!

BY FRED, MARILOU AND ELISE BONCHER

**“SEE THAT CLEAR BLUE ICE NEAR THE TOP OF THE RISE OFF TO OUR RIGHT?”** That’s where the edge of the crevasses begin. We will not snowmobile over there because it is dangerous, and we could break through and end up 300 feet below the surface of the glacier. We will also avoid any standing water because that could be an open lake which, likewise, could be 300 feet deep to the bottom of the glacier. Basically, do not stray too far from my trail.”

That was the warning given to us by our leader and guide Gylfi Saevarsson, the owner and manager of Snowmobile Iceland, before we travelled over snow and ice 300 feet deep on the Langjokull Glacier in Iceland.

My daughter, Elise, replied, “Don’t worry, Gylfi, I plan to stay right in your tracks ... but I am not going anywhere if you suddenly disappear!”

Such was the start to an incredible experience snowmobiling in Iceland across the second largest glacier in

Europe. There had been 3-4 feet of snowfall on the glacier in the few days preceding our trip, but our guide was somewhat disappointed because the snowfall had not been what he was accustomed to seeing. We were there in December though, and there was still plenty of

snow! Riding on a glacier in Iceland, the land of Jules Verne’s “Journey to the Center of the Earth,” was well worth the 5½-hour flight from New York.

Gylfi took my wife, my daughter and me on an all-day adventure in the land of Erik the Red. It’s still hard to believe we were snowmobiling on land once walked by Leif Erikson (son of Erik the Red) and other early North American explorers.

## Ride before the ride

We started out at 9 a.m. in Iceland’s capital city of Reykjavik. Gylfi picked us up in one of his Ford Econoline/F-350 4x4 vans, modified with 46-inch wheels, 16.5 inches wide, with adjusted air pressure (5-25 PSI) to provide flotation for travel through the deep snow. On the 2-hour ride from





## Our gallery of Iceland...



IF YOU HAVE ONE DREAM TRIP TO DO IN YOUR SNOWMOBILE LIFETIME, GET TO ICELAND!

1

Photos 1, 3 and 7 by Sigundur Olafur Sigurdsson

**1 ROOM WITH AN INCREDIBLE VIEW** We didn't stay in a hut/house like this, but the opportunity is available for even more hearty adventurers. Totally off-grid, you can't beat it!

**2 "BIG CITY" LIGHTS** of Reykjavik shine off newly fallen snow and in contrast to the Atlantic Ocean in the background.

**3 "GEYSIR"** Because Iceland is a volcanic landscape, hot springs and geysers are common. Yes, there are opportunities to sled to a hot spring!

**4 LOCAL SCULPTURE** It was not uncommon to see ice art like this beautiful swan perched on the roof of a building.

**5 THE MAN IN CHARGE** Gylfi, part tour guide and part historian, points to our location and where we would be traveling on our tour.

**6 GOIN' RIDIN'** After taking the monster truck in the background to the base camp, then gearing up, we were ready to ride.

**7 GLACIERS STILL HERE** Many large expanses and glaciers, such as the Langjokull glacier, make riding snowmobiles a year-round activity in Iceland.

2

3

4

5

6

7



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## ICELANDIC HISTORY 101

### Early Viking Parliaments

determined punishments, which sometimes included banishment. Such banishments led Erik the Red to flee Iceland and found Greenland. Consequently, a similar scenario in Greenland led to Leif Erikson discovering North America some 500 years before Columbus.

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Permittee of the USFS & NPS, EOP



**WE RIDE!** The new Lynx 900 ACE-powered BRP sleds were perfect, and each was brand new.

Reykjavik to the glacier, we passed Lake Thingvellir (meaning "Parliament Fields"), where the 9th Century Viking Parliament met to discuss major community decisions.

At Lake Thingvellir, just below the lookout site, we could see a deep, wide crack in the earth where the North American Tectonic Plate meets the Eurasian Plate. The tectonic action along these plates accounts for the earthquakes, geysers and volcanos which formed the Icelandic landscape.

Our last checkpoint before we arrived at our snowmobile base camp was the town of Geysir, a town reminiscent of a trip to Yellowstone National Park. It's where Europeans first observed a geyser, as we call it. "Geysir" may have been the only Icelandic word we understood all trip, as most other Icelandic words seem to try to use nearly every letter of the alphabet!

From Geysir, we turned on to a road with an ominous warning "Impassable" (OK, we knew two Icelandic words)! This road had yet to meet a snowplow, and it was illegal to drive on without a properly modified vehicle, such as the one we were in. After another hour of busting through two-foot snowdrifts, we arrived at the Snowmobile Iceland base camp. We entered a warming building, where Gylfi had all the snowmobile gear we'd need, and most-appreciated toilet facilities.

After dressing for the occasion, we boarded new 600cc Lynx snowmobiles

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Situated at an elevation of 6,667 feet, West Yellowstone, Montana has earned a reputation as one of the best of the best snowmobiling locations in North America. The season starts early and ends late, averaging 153" of dry, powdery snow each year.

Whether you prefer steady, mellow cruising with few elevation changes, or you're craving the powdery meadows, West Yellowstone truly is a snowmobiler's heaven!

Explore over 400 miles of groomed snowmobile trails that wind through national forests in Montana, Idaho, and Wyoming. The trail system begins right in West Yellowstone, where snowmobilers share city streets with motorists. Groomed trails lead right to mountain tops and access to back country riding.

The West Yellowstone Trail Grooming program has been grooming the snowmobile trails for over three decades. As the sun sets each day, snowmobilers return to town and the groomers head out to smooth the trails for the next day.

Local businesses provide snowmobile and clothing rentals. Additional equipment, including avalanche beacons and shovels for back country riding can also be rented. National Forest guide service is also available for anyone who wants to learn more about the trail system or for back country riding.

Yellowstone Park transforms into a winter wonderland each year as snowy landscapes contrast sharply against green pines, white-capped mountains and brilliant blue skies. Oversnow travel through Yellowstone's west entrance at West Yellowstone is open from the December 15th through March 15th winter season. Park regulations require snowmobile tours are guided by authorized concessionaires on BAT (Best Approved Technology) snowmobiles.

Daily snowmobile tours leave each morning from West Yellowstone and return in late afternoon. After leaving West Yellowstone, tours stop for wildlife sightings, scenic views, or interesting history and geology spots.

# SNOWMOBILE

## WEST YELLOWSTONE, MONTANA

PHOTO CREDIT: KEN TAKATA AND MARTIN DAVIS, DANA



West Yellowstone  
MONTANA  
TBID  
Yellowstone  
Bureau of  
Land Management

[YELLOWSTONEDESTINATION.COM/SNOW](http://YELLOWSTONEDESTINATION.COM/SNOW)





**SIT BACK AND RELAX!** The Blue Lagoon in Reykjavik is one of the more popular hot springs, with soothing waters and a swim-up bar to enjoy your own libation after a good day's ride.

manufactured in Finland by BRP. These are similar to Ski-Doo's Grand Touring LE 600 ACE sleds many North American riders are familiar with, but with beefed up suspensions. The sleds were even equipped with the latest iTC throttle control too. Gylfi also has access to other kinds of snowmobiles, depending on what type of riding you'd like to do, but we opted for the warm touring machines.

It still took very little effort to carve through the powder on our Lynx sleds, even for my petite wife and daugh-

ter. Remember, there wasn't a huge elevation change, so we were still getting full power out of our little 4-stroke motors.

### Riding the glacier

Langjokull is the second largest glacier in all of Europe at approximately 900 square kilometers, affording you plenty of miles to travel. The largest glacier in Europe is also located in Iceland, but it's far less accessible.

For those of us who have spent our snowmobiling years traveling groomed

trails of the pine and hardwood forests in the Midwest, the glacier experience in Iceland is completely amazing and a once-in-a-lifetime experience. There are virtually no trees in Iceland. In fact, the native birch trees have nearly disappeared, and you'll only find non-native trees that have been purposely planted in the city or around homes.

There's no risk of run-ins with trees, but that also means there are no trees available for other purposes (if you know what I mean)! There were a few shrubs here and there, which Gylfi informed us were known as "Iceland's Forest."

Snowmobiling in Iceland is a year-round experience. Gylfi told stories of snowmobiling in t-shirts in June and July. Unless you're from the Rocky Mountains, summer snowmobiling probably hasn't crossed your radar, and any t-shirt riding you've done is probably because you lost a bet! With summer temps in Iceland reaching only into the 50s, and winters lingering around 20 F, it certainly does not get as cold as our brutal Michigan winters!

### Snowmobile Iceland

Gylfi has more than 40 sleds available in his corral. "One of my favorite parts of my job is to experience snow and snow-

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mobiling with people for their first time. Gylfi's clients have included experts, beginners and celebrities. One woman even showed up to snowmobile in a mini-skirt and high heels! Obviously, vast snowmobiling experience is not a requirement, but intermediate to expert riders will REALLY enjoy this playground too.

Snowmobile Iceland conducts tours year-round, but the best months to visit are March through May. The least satisfying months are August and September, but if that's your only option, there is still exploring to be done.

While the company can accommodate as many as 50 people at a time, it prides itself on keeping each tour group small (around 2-10 people). Gylfi is specially trained in search and rescue with certified avalanche training, and he'll proudly tell you that

they've had no injuries through more than five years of business, despite being located in an area Danish folklore considered the "Gates of Hell."

As an experienced and knowledgeable guide, Gylfi has the ability to not only improve and challenge your snowmobiling skills, but also give you an Icelandic history lesson (both fact and fiction) at the same time. His tours include multi-day snowmobile excursions with stops at waterfalls, hot springs and other scenic locales. Consider an overnight stay at an isolated mountain chalet heated by natural hot spring water, which consequently offers a unique relaxation station in its natural geothermal hot pool.

We recommend checking out the natural hot pools! The Blue Lagoon is a large natural geothermal pool in a volcanic area close to Reykjavik (where our day began). The warm, chest-deep waters condition your skin as you sip local cocktails at the swim-up bar, all with snow falling around you.

If you like to stay up late, consider a nighttime journey away from the city glow, where you can immerse yourself in the full beauty the Northern Lights. Or you can hit up the world-renowned Reykjavic nightlife! There are all kinds of wonderful ways to unwind after an exciting day on the snow! ❄️



**WE DON'T SPEAK Icelandic, but there were a couple signs we could make out!**

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# 1965 Johnson Skee-Horse

## FAMILY FUN AND WINTER ADVENTURE

» **Back in the fall of 1964, Outboard Marine Corp.** (OMC) of Waukegan, Ill., decided to get into the fast-growing sport of snowmobiling. With three years of testing already done, OMC was ready to hit the market. The company produced three variations out of their Peterborough, Ontario, facility: the Johnson Skee-Horse, the Evinrude Skeeter and, in Canada, they changed the name of the Skeeter to Snow Cruiser.

The Johnson Skee-Horse was green, the Evinrude Skeeter had a blue tunnel with a white hood, and Snow Cruisers came in blue. All had the same powertrain, features, and a color-impregnated dent-proof fiberglass cab with a rubber-mounted shatterproof windshield. However, I think they found out these two things didn't always work as planned when they actually started selling to real snowmobilers and not just having field testers approve it.

Power came from a 14 B.H.P. at 4500 RPM -22 cu. in. displacement 2-cylinder "opposed" 2-cycle 360cc motor. The opposed cylinder design canceled out vibrations. In OMC company parlance, it was known as a "hammerhead" because

both spark plugs fired at the same time. OMC put in its brochure that you could run the Skee-Horse wide open all day long without harm: "Its rugged engine gives speeds of over 30 mph, and has enough spunk to tow heavy loads and climb steep grades." Today, our sleds almost idle at 30 mph!



### ■ They said what?

w"Eas-A-Matic rewind starting." What's that? Johnson used this phrase because a lot of snowmobiles just had rope-starting engines back then. The Skee-Horse had a variable speed transmission with a great positive "Lock-In" neutral clutch control for easy engine warmup on cold days.

It came with a nice 16-inch-wide track with rubber belting and steel cleats attached for good traction ... at least for back then. Braking was done with a disc-type assembly. Seating capacity was listed as "2 or 3, depending on size of riders." Excuse me?

The fuel tank capacity was 5 gallons, and the sled had a 32-inch stance. Weighing only 369 pounds, it had a length of nearly 9 ft. and a height of 44 inches.

One thing that was left off was a front bumper. It made for some interesting times getting this sled unstuck if you buried it. I believe the next year's 1966 Skee-Horse came with one standard.

The Skee-Horse had one sealed beam headlight and a taillight. The brochure said they used a muffler, but no DBAs were listed back then. The warranty was for 90 days after first use, and list price was around \$895, plus freight and taxes.

Valdi Stefanson, president of the Antique Snowmobile Club of America, did a restoration of his beauty 1965 Skee-Horse. His goal was to make it as it was delivered from factory before recalls and upgrades. For his efforts, he won first place at the 2015 VSCA National Show in Midland, Mich., last summer.

Recall upgrades included the drive clutch, rear swing arm on the rear of the track, and the tunnel. The 1965 skis came without wear bars. The replacement part was a traditional ski with a single wear rod for turning and increased ski life.

Thanks to Valdi for giving us a close-up of his Johnson Skee-Horse! We know snowmobiles have come a long way from their beginning. That's why it's always nice to get a quick history lesson! 🐾



*Minnesotan Les Pinz is a vintage sled expert with an extensive collection of historic and other antique sleds, and is a former snowmobile racer. He is a member of the International Snowmobile Hall of Fame and one of AmSnow's regular test riders.*

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